National Park Service
U.S. Department of the Interior

Merced Wild and Scenic River

Revised Comprehensive Management Plan
and
Supplemental Environmental Impact Statement

PART 2 OF 2

CHAPTERS V-IX
APPENDICES A-F

JUNE 2005

Yosemite National Park

National Park Service
U.S. Department of the Interior

Merced Wild and Scenic River

Revised Comprehensive Management Plan
and
Supplemental Environmental Impact Statement

PART 2 OF 2

CHAPTERS V-IX
APPENDICES A-F

JUNE 2005

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Table of Contents

Part 1 of 2

Executive Summary

Introduction ES-1

What is the purpose of this Supplemental Environmental Impact Statement? ES-2

User Capacity Management and the VERP Framework ES-2
    What are the methods for managing user capacity? ES-3
    How does Yosemite National Park currently manage user capacity? ES-4

What are the Proposed Alternatives? ES-9
    Alternative 1: No Action ES-9
    Alternative 2: VERP Program with Interim Limits (Preferred) ES-10
    Alternative 3: VERP Program with Segment Limits ES-13
    Alternative 4: VERP Program with Management Zone Limits ES-16

Environmental Analysis ES-18

Environmentally Preferable Alternative ES-18

Consultation and Coordination Process ES-19

Chapter I: Purpose of and Need for the Project

Introduction I-1
    What is a Wild and Scenic River? I-1
    Merced Wild and Scenic River I-1
    Legal History I-3

Project Background I-4

Purpose of the Project I-6

Need for the Revised Merced River Plan/SEIS I-6

Planning Context I-7
    Relationship to Yosemite National Park Plans I-7
    Regulations and Policies I-21

Public Comment Process I-23
    Issues and Concerns Addressed in this Document I-23
    Issues and Concerns Not Addressed in this Document I-24

Organization of the Revised Merced River Plan/SEIS I-25
    Chapter I: Purpose of and Need for the Project I-25
    Chapter II: User Capacity Management Program I-25
    Chapter III: Alternatives I-25
    Chapter IV: Affected Environment I-25
    Chapter V: Environmental Consequences I-26
    Chapter VI: Consultation and Coordination I-26
    Chapter VII: List of Preparers I-26
    Chapter VIII: Glossary I-26
    Chapter IX: Bibliography I-26
    Appendices I-26

Chapter II: User Capacity Management Program

Introduction II-1

What is User Capacity? II-2
    Background II-3
    User Capacity Assumptions II-4
    User Capacity Methods II-5

Yosemite National Park's Existing User Capacity Management Program II-8
Yosemite's Visitor Experience and Resource Protection (VERP) Program II-30
  Desired Conditions/Management Zones II-30
  Specific and Measurable Indicators and Standards II-30
  Monitoring II-32
  Enforcing VERP Limits through Management Actions II-33
  Overview of 2005 Standards and Indicators II-39
  How VERP Works II-48

Chapter III: Alternatives

Introduction III-1
  Relationship between the User Capacity and El Portal Boundary Elements III-2
  Organization of this Chapter III-3
Elements Common to All Alternatives III-4
  Merced River Plan Management Elements III-4
  Wilderness Management III-4
  Private Land and Public Agency Easements III-5
  Administrative Uses III-5
  Traditional Uses by American Indian Tribes III-6
  Mitigation Measures Common to All Construction Projects within the Corridor III-6
Descriptions of the Alternatives III-7
  Alternative 1: No Action III-7
  Alternative 2: VERP program with Interim Limits (Preferred) III-15
  Alternative 3: VERP program with Segment Limits III-29
  Alternative 4: VERP program with Management Zone Limits III-41
Alternatives Considered but Dismissed from Further Analysis III-53
  User Capacity III-53
  El Portal Boundary III-56
Comparison of the Alternatives III-57
Environmentally Preferable Alternative III-74

Chapter IV: Affected Environment

Introduction IV-1
  Impact Topics Considered in this Plan IV-1
  Impact Topics Dismissed from Further Analysis IV-3
Regional Setting IV-4
Natural Resources IV-6
  Geology, Geohazards, and Soils IV-6
  Hydrology, Floodplains, and Water Quality IV-13
  Wetlands IV-25
  Vegetation IV-34
  Wildlife IV-41
  Rare, Threatened, and Endangered Species IV-51
  Air Quality IV-54
  Noise IV-62
Cultural Resources IV-66
  Overview of the Human Occupation of the Merced River Corridor IV-66
  Archeological Resources IV-69
  Traditional Cultural Resources IV-73
  Historic Sites, Structures, and Landscapes IV-75

Visitor Experience IV-81
  Recreation IV-81
  Orientation and Interpretation IV-89
  Visitor Services IV-92
  Wilderness Experience IV-95
Social Resources IV-98
  Land Use IV-98
  Transportation IV-112
  Scenic Resources IV-124
  Socioeconomics IV-128
  Park Operations and Facilities IV-147

Part 2 of 2

Chapter V: Environmental Consequences

Introduction V-1
  Cumulative Impacts V-2
  Impairment V-2
Methodologies V-3
  Natural Resources V-5
  Visitor Experience V-14
  Social Resources V-16
Alternative 1: No Action V-23
  Natural Resources V-23
  Cultural Resources V-77
  Visitor Experience V-91
  Social Resources V-101
  Unavoidable Adverse Impacts V-124
  Irreversible and Irretrievable Commitments of Resources V-124
  Relationship of Short-Term Uses of the Environment and Long-Term Productivity V-124
  Responsiveness of Alternative 1 to the Ninth Circuit Court of Appeals' Direction on the Merced River Plan V-125
Alternative 2: Interim Limits with VERP program V-136
  Natural Resources V-136
  Cultural Resources V-177
  Visitor Experience V-194
  Social Resources V-204
  Unavoidable Adverse Impacts V-223
  Irreversible and Irretrievable Commitments of Resources V-223
  Relationship of Short-Term Uses of the Environment and Long-Term Productivity V-223
  Responsiveness of Alternative 2 to the Ninth Circuit Court of Appeals' Direction on the Merced River Plan V-223
Alternative 3: VERP program with Segment Limits V-235
  Natural Resources V-235
  Cultural Resources V-275
  Visitor Experience V-292
  Social Resources V-300
  Unavoidable Adverse Impacts V-317
  Irreversible and Irretrievable Commitments of Resources V-318
  Relationship of Short-Term Uses of the Environment and Long-Term Productivity V-318
  Responsiveness of Alternative 3 to the Ninth Circuit Court of Appeals' Direction on the Merced River Plan V-318

Alternative 4: Management Zone Limits with VERP V-329
  Natural Resources V-329
  Cultural Resources V-367
  Visitor Experience V-382
  Social Resources V-390
  Unavoidable Adverse Impacts V-407
  Irreversible and Irretrievable Commitments of Resources V-408
  Relationship of Short-Term Uses of the Environment and Long-Term Productivity V-408
  Responsiveness of Alternative 4 to the Ninth Circuit Court of Appeals' Direction on the Merced River Plan V-408

Chapter VI: Consultation and Coordination

Consultation VI-1
  Scoping History VI-1
  Public Review of Revised Merced River Plan/SEIS VI-1
  Results of Draft Review Comments VI-2
  Comment Analysis and Response Process VI-3
Coordination VI-4
  U.S. Fish and Wildlife Service VI-4
  California State Historic Preservation Officer VI-4
  U.S. Forest Service VI-4
  California Department of Transportation VI-4
  Bureau of Land Management VI-5
  American Indian Consultation VI-5
  Gateway Communities VI-5
List of Agencies, Organizations, and Businesses that Received the Revised Merced River Plan/SEIS VI-6
  Federal Agencies VI-6
  United States Representatives VI-6
  State Agencies VI-6
  American Indian Tribes VI-6
  County and Local Governments VI-7
  Organizations and Businesses VI-7
  Libraries VI-9
  Newspapers VI-9
  Radio VI-9
  Television VI-9
  Colleges and Universities VI-10

Chapter VII: List of Preparers

Chapter VIII: Glossary

Glossary of Terms VIII-1
Acronyms and Abbreviations VIII-17

Chapter IX: Bibliography

References IX-1
Map Data IX-35

Appendix A: Governing Mandates A-1
Wild and Scenic Rivers Act A-1
Interagency (Secretarial) Guidelines on the Wild and Scenic Rivers Act A-1
Wilderness Act A-1
1978 National Parks and Recreation Act A-2
16 USC Section 1a-7 .... A-2
CFR (Title 36) A-3
National Park Service Management Policies A-3

Appendix B: Mitigation Measures Common to All Alternatives

Prior to Construction B-1
During Construction B-2
Post-Construction B-4

Appendix C: User Capacity Alternative Assumptions

Appendix D: Special-Status Species

Appendix E: Potential Cumulative Actions

Reasonably Foreseeable Actions E-1
Present Actions E-11
Past Actions E-16

Appendix F: Summary of Public Comments and Responses

Introduction F-3
    Public Comments and Responses F-3
    Results of Draft Review Comments F-3
    How To Use This Document F-4
Concerns, Comments, and Responses F-5
    Planning Process and Policy F-5
    Relationship to Other Planning Efforts F-30
    Implementation Plans and Projects F-40
    Applicable Laws and Regulations F-46
    Consultation and Coordination F-53
    Alternatives F-66
    Other Alternatives F-80
    Cumulative Effects Analysis F-88
    Park Resources F-90
    Special Land Designations F-133
    Visitor Experience F-147
    Access F-154
    Visitor Services F-176
    Transportation F-183
    Socio-economic Environment F-195

Index

List of Figures

Figure I-1 Regional Map I-2
Figure I-2 Revision Process for the Merced Wild and Scenic River Revised Comprehensive Management Plan I-4
Figure I-3 Relationship to Yosemite National Park Plans....................I-7
Figure I-4 Classifications and Outstandingly Remarkable Values of the Merced Wild and Scenic River I-11
Figure II-1 VERP Framework II-9
Figure II-2 Management Zones for the Merced Wild and Scenic River II-17
Figure II-3 Yosemite Valley Management Zones for the Merced Wild and Scenic River....................II-19
Figure II-4 Gorge Management Zones for the Merced Wild and Scenic River....................II-21
Figure II-5 Wawona Management Zones for the Merced Wild and Scenic River II-23
Figure II-6 Range of Potential Management Actions....................II-34
Figure II-7 VERP Framework II-48
Figure III-1 Alternative 1, El Portal Boundary III-13
Figure III-2 Alternative 2, El Portal Boundary (Preferred) III-27
Figure III-3 Alternative 3, El Portal Boundary III-39
Figure III-4 Alternative 4, El Portal Boundary III-51
Figure IV-1 YARTS Ridership along Highway 140 May 2000 through July 2004....................IV-117
Figure IV-2 Yosemite National Park Visitation by Bus IV-119
Figure IV-3 Percent of Annual Buses and Bus Visitors by Month IV-120
Figure IV-4 Annual Park Visitation 1980 to 2004....................IV-141
Figure IV-5 Average Monthly Park Visitation....................IV-141

List of Tables

Table ES-1 Existing User Capacity Management Program Overview ES-5
Table ES-2 Alternative 2: User Capacity Management Program Overview ES-11
Table ES-3 Alternative 2: Interim Limits on Facilities and Specific Activities....................ES-12
Table ES-4 Alternative 3: User Capacity Management Program Overview ES-15
Table ES-5 Alternative 4: User Capacity Management Program Overview ES-17
Table I-1 Outstandingly Remarkable Values of the Merced River (Main Stem and South Fork)....................I-14
Table II-1 Yosemite Wilderness Trailhead Quota System....................II-12
Table II-2 Management Zone Prescription Summary....................II-25
Table II-3 Management Action Toolbox II-35
Table II-4 Possible Levels of NEPA Compliance for Various Management Actions II-38
Table II-5 Yosemite's VERP Program: Indicators and Standards by Management Zone....................II-40
Table III-1 Existing User Capacity Management Program Overview III-9
Table III-2 Alternative 1: Existing Use Levels III-10
Table III-3 Alternative 2: User Capacity Management Program Overview III-17
Table III-4 Alternative 2: Interim Limits on Facilities and Specific Activities....................III-18
Table III-5 Comparison of General Management Plan Visitor Use and Employee Housing Levels (1980) with Existing Conditions (2004) and Proposed Capacity Levels with Full Implementation of the General Management Plan III-23
Table III-6 Comparison of Number of General Management Plan Facilities (1980) with Interim Facility Limits, and General Management Plan Facilities Proposed Facilities....................III-24
Table III-7 Alternative 3: User Capacity Management Program Overview III-30
Table III-8 Alternative 3: Segment and Corridorwide Limits....................III-31
Table III-9 Alternative 4: User Capacity Management Program Overview III-42
Table III-10 Alternative 4: Management Zone and Corridorwide Limits III-45
Table III-11 Comparison of Alternatives and Key Assumptions III-58
Table III-12 Summary of Environmental Consequences III-61
Table IV-1 Summary of California Wildlife Habitat Relationship Types in the Merced River Corridor IV-46
Table IV-2 Air Basin Attainment/Nonattainment Designations IV-55

Table IV-3 Recent Ozone and PM-10 Concentration Data for Yosemite National Park and Vicinity IV-59
Table IV-4 Recreational Opportunities Typical within the Merced River Corridor IV-81
Table IV-5 Concessioner Stock Use IV-88
Table IV-6 Interpretive Programs IV-91
Table IV-7 Total YARTS Ridership along Highway 140, Merced to Yosemite Valley, May 2000 through July 2004 .... IV-118
Table IV-8 Summary of Major Intrusions Within Each Scenic Category IV-127
Table IV-9 Population by County IV-130
Table IV-10 County Population Projections, 2000-2050 .... IV-130
Table IV-11 1996 Employment by Major Industry Sector IV-131
Table IV-12 1996 Income by Major Industry Sector IV-132
Table IV-13 1996 Economic Output by County and Industry Sector IV-132
Table IV-14 1998-2002 Total Taxable Retail Sales by County IV-133
Table IV-15 Employee Housing at Selected Locations in Yosemite National Park IV-137
Table IV-16 Monthly Parkwide Visitation 1980 through 2004 .... IV-142
Table IV-17 Local Overnight Visitors' Lodging Locations (Summer) IV-143
Table IV-18 Existing Lodging and Camping Capacity in the Yosemite Region (excluding National Park Service facilities) IV-144
Table IV-19 Average Daily Spending by Yosemite Visitors in the Affected Region IV-144
Table IV-20 Total Spending by Yosemite Visitor Population Categories in 1998 .... IV-145
Table IV-21 Ethnicity of Yosemite Visitors and California and Yosemite Region Residents IV-145
Table IV-22 Annual Household Income of Yosemite Visitors, California and Yosemite Region Residents IV-146
Table IV-23 2003 Yosemite Valley Energy Consumption IV-152
Table V-1 Effect of Alternative 1 on the ORVs of the Merced River V-130
Table V-2 Typical Noise Levels from Construction Equipment V-172
Table V-3 Effect of Alternative 2 on the ORVs of the Merced River V-229
Table V-4 Effect of Alternative 3 on the ORVs of the Merced River V-323
Table V-5 Effect of Alternative 4 on the ORVs of the Merced River V-413
Table C-1 Alternative 1: No Action Alternative C-2
Table C-2 Alternative 2: Interim Limits on Facilities and Specific Activities C-4
Table C-3 Comparison of GMP Visitor Use and Employee Housing Levels (1980) with Existing Conditions (2004) and GMP Proposed Levels at full implementation C-5
Table C-4 Alternative 3: Segment and Corridorwide Limits C-6
Table C-5 Alternative 4: Management Zone and Corridorwide Limits C-8
Table D-1 Rare, Threatened, and Endangered Species Considered in this Analysis D-1

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Chapter V

Environmental Consequences

Chapter V: Environmental Consequences

Introduction

The National Environmental Policy Act (NEPA) requires that environmental documents disclose the environmental impacts of a proposed federal action, reasonable alternatives to that action, and any adverse environmental effects that cannot be avoided should the proposed action be implemented. This chapter analyzes the environmental impacts of the four *Merced Wild and Scenic River Revised Comprehensive Management Plan and Supplemental Environmental Impact Statement* (Revised Merced River Plan/SEIS) alternatives on natural resources, cultural resources, the visitor experience, and social resources. This analysis provides the basis for comparing the beneficial and adverse effects of the alternatives.

In compliance with NEPA, the environmental analysis evaluates the potential effects of the alternatives on all of the park's natural, cultural, visitor experience, and social resources, including those not encompassed within the Outstandingly Remarkable Values (ORVs). However, since this document must comply with the requirements of the Wild and Scenic Rivers Act, the potential effects of the alternatives on the ORVs for each segment are addressed in the resource analysis. In addition, how each alternative protects and enhances the ORVs under the Wild and Scenic Rivers Act is summarized in the tables at the end of the analysis section for each alternative.

This analysis only addresses environmental consequences associated with the development and implementation of a user capacity program for the Merced River corridor and the reassessment of the river corridor boundary based on the location of ORVs and related management zoning prescriptions in the El Portal segment. The remaining management elements as previously described and analyzed in the Merced River Plan/FEIS are not being revisited or reanalyzed in this Plan.

Due to the conceptual nature of the alternatives, their potential consequences can be addressed only in qualitative terms. The conclusions presented herein are based on review of existing information provided by the National Park Service. If and when specific National Park Service management actions are proposed as a result of this plan, National Park Service staff will determine whether more detailed environmental documentation is required, consistent with the provisions of NEPA.

Following this introduction, Chapter V presents the methodologies used in the environmental impact analysis. The impact analyses sections are organized by alternative. The first section analyzes Alternative 1 (the No Action Alternative), including impacts on natural resources, cultural resources, the visitor experience, and social resources and presents mitigation measures, cumulative impacts, and impact conclusions. The same framework of analyses is applied to Alternatives 2, 3, and 4 in subsequent sections. Environmental impacts are summarized in table III-12 at the end of Chapter III.

Cumulative Impacts

A cumulative impact is described in regulations developed by the Council on Environmental Quality (CEQ), regulation 1508.7, as follows:

> *". . . a "Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."*

Appendix E contains the list of past, present, and reasonably foreseeable actions included in the cumulative impacts analysis. These cumulative actions are evaluated in the impact analysis in conjunction with the impacts of an alternative to determine whether they would have any additive effects on a particular natural, cultural, or social resource. Because many of these cumulative actions are in the early planning stages, the evaluation of cumulative impacts was based on a general description of each project.

The Revised Merced River Plan/SEIS is a programmatic document and does not recommend implementation of specific large-scale construction or development related actions. As a result, the cumulative impacts analysis is presented in qualitative terms, rather than in specific measured or quantitative terms. General guidance and methodologies for the cumulative impacts analysis in this document follow those published by the CEQ (CEQ 1997). Cumulative impacts have been analyzed for each alternative, and can be found following the environmental consequences analysis for each resource topic. The methodology for defining the context, intensity, duration and type of cumulative impact for a specific resource topic is the same as that described for the environmental consequences analysis of each resource topic.

Impairment

Impairment is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. The need to analyze and disclose impairment impacts originates from the 1916 Organic Act, which mandated the National Park Service "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

An impact would be less likely to constitute impairment if it is an unavoidable result (which cannot reasonably be further mitigated) of an action necessary to preserve or restore the integrity of park resources or values (NPS 2000c). An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park
- Identified as a goal in the park's *General Management Plan* (NPS 1980a) or other relevant National Park Service planning documents

Impairment of park resources was evaluated on the basis of the type and intensity of impacts, and in terms of the types of resources affected. Impairment is generally considered for natural, cultural, and scenic resources. Overall, beneficial impacts would not constitute impairment. With respect to the intensity of impacts, negligible and minor adverse impacts are not of sufficient magnitude to constitute impairment. Moderate and major adverse impacts may constitute impairment, but not automatically. Rather, these impacts must be analyzed with respect to the three criteria presented above. Impairment is generally considered for geological, hydrological, biological, cultural, and scenic resources. Impairment determinations are not required for resource topics that are not considered to be park resources or values. Thus, impairment is addressed in the conclusion section of the appropriate resource topics under each alternative.

Methodologies

This section presents the methodologies used to conduct the environmental impact analyses. The section begins by describing methodologies and assumptions common to all resource topic areas, and then presents methodologies specific to individual resource topic areas in the following order:

> **Natural Resources:** Geology, Geohazards, and Soils; Hydrology, Water Quality, and Floodplains; Wetlands; Vegetation; Wildlife; Rare, Threatened, and Endangered Species; Air Quality; and Noise
>
> **Cultural Resources:** Archeological Resources; Traditional Cultural Resources; and Historic Sites, Structures, and Landscapes
>
> **Visitor Experience:** Recreation; Interpretation and Orientation; Visitor Services; and Wilderness Experience
>
> **Social Resources:** Land Use; Transportation; Scenic Resources; Socioeconomics; and Park Operations and Facilities

Each resource topic area includes a discussion of the impacts of each alternative, including the identification of the impacts or affects of the actions comprising the alternative, and a characterization of the impacts in terms of context, intensity, duration, and type of impact. The context of the impact considers whether the impact would be local or regional. The intensity of the impact refers to the severity or magnitude of the impact, and considers whether the impact would be negligible, minor, moderate, or major. The duration of the impact considers whether the impact would occur in the short term (temporary) or the long term (permanent). The type of impact considers whether the impact would be beneficial or adverse to the natural, cultural, or social environment.

Annual park visitation peaked at just over 4.19 million visitors in 1996. Park visitation decreased from 1996 through 2004 to approximately 3.39 million visitors annually. However, for the purposes of this analysis, it is expected that overall park visitation will increase slowly over the next 15 years under existing park management policies (the No Action Alternative). Although it is not known how much annual visitation would increase by 2020, it is expected that increased visitation during peak periods would require implementation of restricted access to Yosemite Valley during some peak visitation periods. Increased visitation demand by 2020 would be expected to trigger the need to implement restricted access on an increasing number of days during the peak season, and it is expected that there would be more restricted access days in 2020 than is currently experienced. Increases in 2020 visitation levels would be expected to occur primarily during the current non-peak periods (e.g., before and after peak summer months, and on weekdays during peak summer months).

With the implementation of a VERP program and possibly limits, some of the alternatives could result in decreased visitation to segments of the Merced River corridor. As a result, it is assumed that by 2020 some visitors could be displaced to other areas of the park or displaced from the park itself.

This document is a programmatic plan that looks at broad user capacity program frameworks. The plan does not recommend implementation of specific developments or actions. To provide decision makers and the public with an accurate idea of the environmental consequences of the Revised Merced River Plan/SEIS alternatives, the analysis team identified potential actions that management could implement under the frameworks provided under each of the action alternatives and analyzed their effects as compared to conditions under the No Action Alternative. The environmental consequences analyses are qualitative rather than quantitative, because the action alternatives are conceptual and specific actions are not prescribed under this plan.

The environmental consequences analysis in this chapter evaluates the potential effects of implementation of various types of management actions. Because implementation of VERP would allow for park management to use a variety of management tools to address user-related impacts, the analysis evaluates the potential effects of a broad range of actions – from public education to construction of improvements to visitor access restrictions. In reality, implementation of the VERP program would likely result in the implementation of a number of these measures, as determined to be appropriate based on site-specific circumstances. VERP is an adaptive management process, and management actions would change and evolve based on the continued monitoring of actual conditions versus desired conditions. Thus, if VERP monitoring indicated there was a yellow light condition (see table II-6 in Chapter II), park management could begin implementing measures such as public education, installation of temporary barriers, or other easily management actions to bring conditions back within standards. If conditions were to continue to decline, park management would most likely implement additional, more restrictive or intensive measures to address the impacts. Because the VERP program requires park management to take actions to keep conditions within adopted standards, or to improve conditions that do not meet the standards, park management would continue to implement a variety of measures as needed to meet the adopted standard. Therefore, although the effects of individual management actions taken in the short term are identified in each section, the overall effect of the VERP component of the action alternatives would be to protect and enhance the condition of park resources and ORVs in the long term.

Finally, the No Action Alternative for the Revised Merced River Plan/SEIS includes the implementation of all of the elements of the Merced River Plan (with the exception of VERP), as well as implementation of other existing user capacity measures described in Chapter II, such as the trailhead quota system and facility limits. Although each of the action alternatives also includes implementation of the Merced River Plan elements and the user capacity program as described under the No Action Alternative, the analysis in this chapter focuses on the effects of implementing the additional user capacity elements of each action alternative (VERP, limits) compared to the No Action Alternative.

Natural Resources

Geology, Geohazards, and Soils

This impact assessment focused on effects that geologic processes in the Yosemite National Park would have on visitors, employees, and facilities under each alternative of the Revised Merced River Plan/SEIS. Geologic processes can negatively affect visitors, employees, and facilities when events such as rockfalls, earthquakes, and severe soil instability result in injury, death, or damage to facilities.[1] The assessment also focused on the effect the Revised Merced River Plan/SEIS alternatives would have on the geologic processes, namely, the formation and conservation of soil resources. Impacts associated with management actions discussed in this Revised Merced River Plan/SEIS could affect current soil resources through accelerated erosion, soil loss, or soil removal.

Several assumptions regarding facility placement, geologic design parameters, and public safety were integrated into this assessment, as summarized below.

- It is not possible to avoid risks due to geologic processes such as earthquakes and rockfalls. Considering this, some facilities located within the park, especially in Yosemite Valley, the Merced River gorge, and El Portal would be exposed to risks of damage from rockfalls.
- Geotechnical studies to determine soil stability conditions would be performed prior to placing, designing, or relocating a facility within the park, and facility design within Yosemite National Park would conform to accepted building codes regarding seismic design parameters.
- In emergency situations, the National Park Service may mechanically trigger a rockfall, but in most cases the National Park Service allows natural processes to occur unimpeded.
- The National Park Service has developed geologic hazard guidelines for development within Yosemite Valley (Appendix C in NPS 2000e). The focus of these guidelines is to protect visitors, employees, and infrastructure from geologic hazards and to locate facilities out of geologically hazardous areas.
- In the event of a rockfall, the National Park Service would close the affected area to protect visitor and employee safety. Rocks on roads would be removed, but rockfall talus in rivers would not be removed, unless the river is dammed and flooding threatens utilities or facilities.

Geologic risks that affect public safety are rarely predictable, and the extent to which they can affect people and property cannot be quantified. Quantitative analysis of other potential effects, such as soil erosion, removal, and loss was not feasible for this impact assessment due to the programmatic nature of the plan. Rather, analysis of effects was qualitative, and professional judgment has been applied to reach reasonable conclusions as to the context, intensity, and duration of potential impacts. When possible, mitigation measure(s) were incorporated into this Revised Merced River Plan/SEIS to reduce the intensity of adverse effects.

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[1] Throughout Chapter V, unless otherwise noted, "rockfalls" is used as a generic term to refer to rockfalls in a strict sense but also to rockslides, debris avalanches, debris flow, and rock avalanches.

Impact Assessment

The impact assessment addressed geologic hazards (earthquakes and rockfalls) and impacts to soil resources. Geologic hazards that would expose people to injury and infrastructure to damage were considered in terms of impacts to public safety. Geologic impacts related to facility development or natural resource protection were considered in terms of depletion of or adverse effects on soil resources. Potential management actions under each alternative were evaluated in terms of the context, intensity, and duration of the geologic impacts, and whether the impacts were considered to be beneficial or adverse to visitors, infrastructure, or soil resources.

Context. The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would be those that occur within Yosemite National Park or impacts specific to the river corridor, including the El Portal Administrative Site. In considering geologic hazards, it was assumed that the impacts would be consistently local.

Intensity. The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts were effects considered not detectable and that would have no discernible effect on public safety or soil resources. Minor impacts were those that would be present but would not be expected to have an overall effect on those conditions. Moderate impacts would be clearly detectable, and could have an appreciable effect on public safety and soil resources. Major impacts would have a substantial, highly noticeable influence on public safety and soil resources.

There will always be a potential for adverse impacts to life and property due to geologic hazards in Yosemite National Park. Therefore, management actions to avoid placement of facilities (or reduce numbers of people) in areas susceptible to geologic hazards may decrease the risks but would not necessarily reduce the intensity of the impact.

Duration. The duration of an impact considers whether the impact would occur in the short term or the long term. A short-term impact would be temporary in duration and would be associated with transitional types of impacts. A long-term impact would have a permanent effect on public safety and geologic conditions.

Type of Impact. Impacts were evaluated in terms of whether they would be beneficial or adverse to public safety and soil resources. Beneficial impacts would improve soil resources by restoring areas and limiting development. Adverse impacts would expose people and property to effects of earthquakes and rockfall events. Adverse impacts also would deplete or negatively alter soil resources.

Hydrology, Floodplains, and Water Quality

This section analyzed potential changes to hydrologic processes of the Merced River, including the river's interaction with its floodplain as well as water quality. This qualitative assessment focused on the physical and chemical processes of the Merced River that might be altered under the management practices called for as part of the proposed alternatives. Quantitative analyses of any potential changes to the Merced River were not feasible due to the programmatic nature of the plan. Analysis of the alternatives was qualitative and based on identified hydrologic processes, as described in the Hydrology, Floodplains, and Water Quality section in Chapter IV, Affected Environment.

Streamflow

The analysis examined potential changes to the free-flowing nature of the river as a result of the potential management actions listed under each of the action alternatives. This section addressed existing and potential future restrictions on streamflow and the possibility of removing current streamflow restrictions, such as dams or levees.

Floodplain

This section qualitatively analyzed the impacts or benefits to the river's floodplain due to potential changes in intensity and location of visitor use along the river. Due to the qualitative nature of this assessment, a reduction or modification of visitor use and facility development in the floodplain was perceived to be beneficial to the floodplain and protection of the river channel.

Water Quality

The analysis identified potential effects on water quality associated with visitor use and the generation of nonpoint-source pollution, such as refuse and automobile-related pollutants. Additionally, the analysis examined potential impacts on water quality from construction or removal of facilities within the river's floodplain.

Impact Assessment

Proposed management actions for each alternative were evaluated in terms of the context, intensity, and duration of the hydrologic impacts, and whether the impacts were considered to be beneficial or adverse to the hydrologic environment.

Context. The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would be those that occur at localized areas due potential management actions within the corridor. Regional impacts would be impacts on the entire river corridor within Yosemite National Park.

Intensity. The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts were effects considered not detectable and that would have no discernible effect on the hydrology or quality of the river. Minor impacts were effects on hydrologic processes that were slightly detectable but not expected to have an overall effect on the character of the river or its floodplain. Moderate impacts would be clearly detectable and could have an appreciable effect on hydrologic processes, the adjacent floodplain, or water quality. Major impacts would have a substantial, highly noticeable influence on the hydrologic environment and could permanently alter river processes, floodplain formation and evolution, and water quality.

Duration. The duration of the impact considers whether the impact would occur in the short term or the long term. A short-term impact would be temporary in duration and would be associated with transitional activities, such as facility construction or road removal. A long-term impact would have a permanent effect on the hydrologic environment, such as altering the dynamic processes that govern the free-flowing nature of the river, floodplain formation and evolution, or the condition of water quality.

Type of Impact. Impacts were evaluated in terms of whether they would be beneficial or adverse to the hydrologic environment. Beneficial impacts would sustain streamflow dynamics, allow natural processes to prevail, and protect or improve water quality. Adverse impacts would negatively alter hydrologic processes, thereby hindering natural processes and reducing protection of the river, its floodplain, and water quality.

Wetlands; Vegetation; Wildlife; and Rare, Threatened, and Endangered Species

National Park Service policy is to protect the natural abundance and diversity of all of the park's naturally occurring communities. To provide a consistent basis for analyzing impacts, and to ensure that alternatives are compared using the same frame of reference, the methodology described below was developed.

Some aspects of impact assessment methodology relate simply to whether an action breaches federal laws, regulations, and executive orders; similar state laws (for example, the California Endangered Species Act); or National Park Service *Management Policies 2001* (NPS 2000f). A second level of impact assessment must address issues and concerns expressed during public scoping. The third, and probably the most important, level compares a projected impact with the natural history of a species or the known sensitivities of a habitat.

This assessment was based on the assumptions listed below.

- The greater the size of a biotic community and the stronger its links to neighboring communities, the more valuable it is to the integrity and maintenance of biotic processes. Development limits the size of a community and fragments and disassociates communities from each other.
- The more developed areas become, the less valuable they are as wildlife habitat. New development would increase human presence and increase the potential for soil, wildlife, and vegetation disturbance. The potential for negative wildlife interactions (such as human injury from wildlife and the introduction of unnatural food sources) also would increase. The removal of development from an area would increase the value of the habitat. However, in some cases, dispersal of the same number of visitors may well have a greater impact than an existing "containment" of disturbance within a designated area.
- The effects of human food on the behavior, distribution, and abundance of wildlife species would continue in existing developments and would begin in new developments unless adequate facilities, education, and enforcement were provided.
- The juxtaposition of natural communities to roads and other developments hinders the use of prescribed fire for restoring historic fire intensity, frequency, and severity.
- Development and activities near sensitive habitats may adversely affect adjacent natural communities. Modifications of a river channel may cause channel instability and shifting, increased bank erosion, and changes in flood-flow elevations. The presence of well-vegetated banks and a sufficient width of riverbank protects the integrity of the river channel and shore.
- Disturbance in or near a river and its tributaries may reduce the productive capabilities of associated natural communities. Modifications to river form, soil compaction, loss of riparian vegetation, removal of woody debris, and accelerated erosion and sediment transport influence important habitat characteristics such as riffle/pool complexes, substrate type, location, and cover. These physical aspects often determine the composition of vegetative and aquatic communities.
- Roads change water inflow and outflow patterns and may dewater sections of meadow. The lack of a sufficiently high water table in meadows allows invasive plants to outcompete native vegetation and encourages conifer establishment, which threatens meadow communities.

- Roads generally form barriers for wildlife and fragment habitat.
- Development and impacts in riparian zones may influence critical water quality elements such as water temperature, suspended sediments, and nutrients. These elements interact in complex ways in aquatic systems and directly and indirectly influence patterns of growth, reproduction, and migration of aquatic organisms.
- Ecological restoration of native communities would involve some short-term adverse impacts (e.g., smoke from prescribed burning) but over time can successfully replicate natural processes.

Quantitative analysis—that is, determining a measure of impact such as decibels of sound reaching the nest of a spotted owl—was not feasible for this methodology because this plan is programmatic and does not look at the implementation of specific actions. Qualitative analysis relies substantially on professional judgment, supported by extrapolation of relevant research, where appropriate, to reach reasonable conclusions as to the context, intensity, duration, and type of potential effect. When possible, mitigation measure(s) were incorporated into the document to reduce the adverse effects of impacts to natural resources.

Impact Assessment

The starting point for impact assessment is the natural processes of the Merced River corridor, including size, physical foundation, and components of the natural communities and ecosystems.

Proposed management actions under each alternative were evaluated in terms of the context, intensity, and duration of the impacts, as defined below, and whether the impacts were considered to be beneficial or adverse to the natural environment. Generally, the methodology for natural resource impact assessment follows direction provided in the *Council of Environmental Quality Regulations for Implementing the National Environmental Policy Act*, section 1508.27.

Context. Context suggests that certain impacts depend upon the setting of the proposed action. For instance, impacts that reduce the value of the Merced River in providing connectivity between habitat types could be minor if such connections are abundant in a given region, moderate or major if they are not. The context of the impact considers whether the impact would be local or regional.

Intensity. The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. These designations are used to describe both beneficial and adverse impacts. Negligible impacts were effects considered detectable but having no principal effect on biological resources. Minor impacts were effects that were detectable but not expected to have an overall effect on natural community structure. Moderate impacts would be clearly detectable and could have an appreciable effect on individual species, community ecology (e.g., the numbers of different kinds of amphibians present), or natural processes (e.g., fire). Major impacts would have a substantial, highly noticeable influence on natural resources. This would include impacts that have a substantial effect on individual species, community ecology, or natural processes.

Duration. Under this heading, both short- and long-term effects are relevant. A short-term impact would be temporary in duration and associated with transitional types of impacts, such as facility construction or bridge removal. Long-term impacts are somewhat more conjectural. For example, long-term declines in bird species diversity at heavily used sites may take decades to become evident.

Type of Impact. The type of impact considers whether the impact would be beneficial or adverse to biological resources. Effects to biological resources are considered beneficial if an action causes no detrimental effect and results in an increase in rare species or habitat components, native ecosystem processes, native species richness/diversity, or native habitat quantity and quality.

Air Quality

The air quality impact assessment involved the identification and qualitative description of the types of actions under the various alternatives that could affect air quality, corresponding emissions sources and pollutants, and relative source strengths. Based on the relative source strengths, a qualitative assessment was performed to determine the potential for higher pollutant emissions or concentrations, taking into account the frequency, magnitude, duration, location, and reversibility of the potential impact. In addition, regional pollutant transport issues were evaluated in the context of regional cumulative impacts.

Several assumptions were integrated into this assessment:

- This plan would not affect the smoke management policies in the *Fire Management Plan* (NPS 2004b).
- This plan would not affect the campfire regulations in the Valley.
- The National Park Service would continue to ensure that all stationary emissions sources under its control or under the control of its concessioners comply with applicable air district rules and regulations.
- The National Park Service would continue to participate in the regional air quality planning processes for ozone, PM-10/PM-2.5, and visibility impairment and would continue to review applications for new or modified major stationary sources upwind of the park, pursuant to Prevention of Significant Deterioration regulations.
- The National Park Service would comply with U.S. Environmental Protection Agency's (U.S. EPA's) general conformity rule for any future actions that would occur within Madera County, which is part of San Joaquin Valley Air Basin, a nonattainment area for the national 1-hour ozone, 8-hour ozone, and PM-10 standards, and within Mariposa County, which is a nonattainment area for the national 8-hour ozone standard.

Quantitative analysis of potential air quality impacts was not feasible due to the programmatic nature of this plan. Rather, analysis of effects was qualitative, and professional judgment was applied to reach reasonable conclusions as to the context, intensity, and duration of potential impacts. When possible, mitigation measure(s) were incorporated into the plan to reduce the intensity of adverse effects.

Impact Assessment

The air quality impact assessment of the plan evaluated how types of changes would affect air pollutant emissions and concentrations. Air quality impacts were evaluated in terms of their context, intensity, and duration, and whether the impacts were considered to be beneficial or adverse.

Context. The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would be those that occur within Yosemite National Park or impacts specific to the river corridor, including the El Portal Administrative Site. Regional impacts would be those related to the applicable air basins: Mountain Counties Air Basin and San

Joaquin Valley Air Basin. With respect to air quality issues, both local and regional perspectives were relevant.

Intensity. The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts were effects considered not detectable and that would have no discernible effect on air quality. Minor impacts were those that would be present but not expected to have an overall effect on those conditions. Moderate impacts would be clearly detectable and could have an appreciable effect. Major impacts would have a substantial, highly noticeable influence on local or regional air quality.

Duration. The duration of the impact considers whether the impact would occur in the short term or the long term. A short-term impact would be temporary in duration and would be associated with transitional types of impacts. A long-term impact would have a permanent effect on air quality.

Type of Impact. Impacts were evaluated in terms of whether they would be beneficial or adverse to air quality. Beneficial air quality impacts would reduce emissions or lower concentrations, and adverse impacts would have the opposite effect.

Noise

The noise impact assessment involved the identification and qualitative description of the types of actions proposed under each alternative that could affect the ambient noise environment, corresponding noise sources, relative source strengths, and other characteristics. Based on the relative source strengths, a qualitative assessment was performed to determine the potential for a substantial increase in ambient noise levels in areas where natural quiet is an important resource. Assessments were also performed where noise-sensitive uses are located or would expose persons to excessive noise levels taking into account the frequency, magnitude, duration, location, and reversibility of the potential impact. In addition, regional noise issues such as aircraft overflights were discussed in the context of long-term trends in wilderness noise exposure.

Quantitative analysis of potential noise impacts was not feasible due to the programmatic nature of this plan. Rather, analysis of effects was qualitative, with professional judgment applied to reach reasonable conclusions as to the context, intensity, and duration of potential impacts. When possible, mitigation measure(s) were incorporated into the plan to reduce the intensity of adverse effects.

Impact Assessment

The noise impact assessment evaluated how these three basic types of changes of the plan would affect the ambient noise environment in the corridor. Noise impacts were evaluated in terms of their context, intensity, and duration, and whether the impacts were considered to be beneficial or adverse.

Context. The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would be those that occur within Yosemite National Park or impacts specific to the river corridor, including El Portal. In considering noise impacts, it was assumed that the impacts would be consistently local.

Intensity. The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts were effects considered not detectable and that would have no discernible effect on the ambient noise environment. Minor impacts were those that would be slightly detectable but not expected to have an overall effect on those conditions. Moderate impacts would be clearly detectable and could have an appreciable effect. Major impacts would have a substantial, highly noticeable influence on the ambient noise environment.

Duration. The duration of the impact considers whether the impact would occur in the short term or the long term. A short-term impact would be temporary in duration and would be associated with transitional types of impacts, such as construction noise impacts. A long-term impact would have a permanent effect on the ambient noise environment related to park operations.

Type of Impact. Impacts were evaluated in terms of whether they would be beneficial or adverse to the ambient noise environment. Beneficial noise impacts would reduce associated levels and/or exposure, while adverse impacts would have the opposite effect.

Cultural Resources

Section 106 of the National Historic Preservation Act requires a federal agency to take into account the effects of its undertaking on properties included in, or eligible for inclusion in, the National Register of Historic Places (National Register) and provide the Advisory Council on Historic Preservation the reasonable opportunity to comment. This also applies to properties not formally determined eligible, but which are considered to meet eligibility requirements.

The methodology for assessing impacts to historic resources is based on the 1999 Programmatic Agreement (see Appendix H in the Merced River Plan/FEIS) (NPS 1999w). This includes: (1) identifying area of potential impact; (2) assessing the level of resource information available, and conducting appropriate research and evaluations necessary to obtain information about resources potentially eligible for listing in the National Register; (3) comparing the area of potential effect with that of resources listed, eligible, or potentially eligible for listing in the National Register; (4) identifying the extent and type of effect; (5) assessing these effects according to procedures established by the Advisory Council's regulations; and (6) considering ways to avoid, minimize, or mitigate adverse effects (36 CFR 800).

Cultural resource impact analysis in this environmental impact statement is described in terminology consistent with the regulations of the CEQ. CEQ regulations require that the impacts of alternatives and their component actions be disclosed. It is intended that the impact assessment will comply with the requirements of both NEPA and Section 106 of the National Historic Preservation Act. The determination of effect for the undertaking (implementation of the alternative) required by the 1999 Programmatic Agreement is included in the Conclusions section for each alternative. Consistent with CEQ regulations, the analysis of individual actions includes identification and characterization of potential impacts, including an evaluation of impact intensity. This is a fundamental difference between NEPA and the National Historic Preservation Act; the National Historic Preservation Act requires determinations of no effect or effect, and furthermore, where there is a determination of effect, requires a determination of whether that effect is adverse or not adverse. Effect is evaluated on the basis of whether an undertaking alters the characteristics of a property qualifying it for eligibility to the National Register. Intensity of impacts in the cultural resource analysis then, for purposes of NEPA, is defined as:

Negligible – Impact is barely perceptible and not measurable; confined to small areas or a single contributing element of a larger national register district or archeological site(s) with low data potential

Minor – Impact is perceptible and measurable; remains localized and confined to a single contributing element of a larger national register district or archeological site(s) with low to moderate data potential

Moderate – Impact is sufficient to cause a change in character-defining feature; generally involves a single or small group of contributing elements or archeological sites(s) with moderate to high data potential

Major – Impact results in substantial and highly noticeable change in character-defining features; involves a large group of contributing elements and/or individually significant property or archeological site(s) with high to exceptional data potential

Archeological resources are typically considered eligible for inclusion in the National Register because of the information they have or may be likely to yield. Intensity of impacts to archeological resources relates, additionally, to the importance of the information they contain and the extent of disturbance or degradation.

Traditional cultural resources are considered eligible for inclusion in the National Register as Traditional Cultural Properties when they are rooted in a community's history and are important in maintaining the continuing cultural identity of the community and meet National Register criteria for evaluation and integrity. Intensity of impacts to traditional cultural resources may relate to access and use of, as well as changes to, traditionally important places.

Historic sites, structures, and landscapes are considered eligible for inclusion in the National Register when they are associated with events that have made a significant contribution to the broad patterns of our history; when they are associated with the lives of persons significant in our past; or when they embody the distinctive characteristics of a type, period, or method of construction. Intensity of impacts to historic sites, structures and landscapes may relate to the extent of degradation of site and structural integrity, including the loss of landscape characteristics.

Council of Environmental Quality regulations, moreover, call for a discussion of the "appropriateness" of mitigation and NPS-12, the *National Environmental Policy Act Guideline* of the National Park Service, requires an analysis of the "effect" of mitigation. The "resultant" reduction in intensity from mitigation is an estimate of the effectiveness of mitigation under NEPA. It does not suggest that the level of effect as comprehended by Section 106 is similarly reduced.

Mitigation for NEPA purposes in this environmental impact statement is based on the park's 1999 Programmatic Agreement and includes avoidance of adverse effects or application of one or more Standard Mitigation Measures described in Stipulation VIII(A) of this Agreement. Avoidance strategies may include application of the Secretary of the Interior's Standards, design methods such as vegetation screening when placing new facilities in a historic district, and development of design standards to ensure compatibility.

In the case of archeological resources, mitigation includes avoidance of sites through design by minimizing effects through recovery of information that makes sites eligible for inclusion in the National Register. Generally, this data recovery will be based on the 1999 *Archeological Synthesis and Research Design*. In accordance with Stipulation VIII of the 1999 Programmatic Agreement, Standard Mitigation Measures may be implemented when avoidance is not feasible or prudent and the undertaking may result in an adverse effect on historic properties. Standard Mitigation Measures include documentation according to standards of the Historic American Buildings Survey/Historic American Engineering Record as defined in the October 1, 1997, Re-Engineering Proposal. The level of this documentation, which includes photography and a narrative history, would depend on significance (national, state, local) and individual attributes (individual elements of a cultural landscape, individually significant structures, etc.). When demolition of a historic structure is proposed, a select few architectural elements and objects may be salvaged for reuse in rehabilitating similar structures or added to the park's museum collection. However, only a limited number of elements and objects can be added to the museum. In addition, the story of history of alteration of the human environment, and reasons for that alteration, will be interpreted to park visitors.

According to Stipulation VII(C) of the 1999 Programmatic Agreement, effects on archeological resources are considered "not adverse" for purposes of Section 106 if data recovery is carried out in accordance with the 1999 research design. Under the revised regulations of the Advisory Council on Historic Preservation of May 18, 1999 (36 CFR 800, Protection of Historic Properties, Final Rule and Notice), data recovery is considered to be an "adverse effect." However, according to Part 800.3(A)(2) of those revised regulations, provisions of programmatic agreements in existence at the effective date of the new regulations are governed by the regulations in place when the Agreement was developed.

The National Park Service would continue to consult with culturally associated American Indian tribes according to stipulations of the Programmatic Agreement and specific agreements, such as the October 17, 1999, Agreement Between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities, to develop appropriate mitigating strategies for effects to traditional cultural resources. Such strategies could include identification of and assistance in providing access to alternative resource gathering areas, continuing to provide access to traditional use or spiritual areas, and screening new development from traditional use areas.

Visitor Experience

This impacts analysis evaluated four separate aspects of visitor experience: recreation, orientation and interpretation, visitor services, and wilderness experience. Separate methodologies have been developed for each of these impact areas. This analysis evaluated the quality characteristics of the visitor experience in terms of how they might be altered as a result of the various user capacity measures and management zone actions described in the alternatives.

Visitor experience in Yosemite National Park encompasses a broad spectrum of elements, including access to and availability of recreational opportunities, orientation and interpretation programs, various visitor services, and access to the Yosemite Wilderness. In addition, every individual visitor to Yosemite brings unique expectations and thus each has a unique experience. This Revised Merced River Plan/SEIS identifies, where possible, how the quality of the experience would change given application of potential management actions discussed in each of the action alternatives.

Developing a quantitative analysis of potential effects on visitor experience is not feasible because of the programmatic nature of this plan. Analysis of effects is therefore qualitative, and professional judgment was applied to reach reasonable conclusions as to the context, intensity, and duration of potential impacts.

Recreation

Assumptions for the recreation analysis are based on visitor studies conducted over the last several years (Manning et al. 1999a, b; ORCA 2000). The assumptions that framed the analysis included the following:

- Under all alternatives, visitor demand would increase in all areas between 1999 and 2020.
- The visitor preference for use of private vehicles to access the park would not change.
- Lodging and camping facilities damaged and removed as a result of the January 1997 flood would not be replaced in the same place they were previously located.
- Under the No Action Alternative, there would be no change in access to the Yosemite wilderness areas and no change to the wilderness permit system.
- Under the No Action Alternative, stock use would continue as currently managed.
- A diverse range of recreational activities is desirable.
- Most visitors to the Valley feel that traffic congestion and crowding reduce the quality of visitor experience.

The analysis was based on whether there was a complete loss of a recreational opportunity, a change in access to or availability of a recreational opportunity, or a change in the aggregate of recreational opportunities for the visitor. This analysis evaluated how potential management activities under the various alternatives would affect recreation opportunities available in all segments of the Merced Wild and Scenic River within Yosemite National Park. The range of recreational opportunities includes floating, swimming and wading, hiking, backpacking, camping, rock climbing, fishing, sightseeing, photography, nature study, bicycling, and stock use.

Orientation and Interpretation

The impact analysis was based on whether there would be a change in the availability of the existing range of interpretation programs and orientation/information sources and services throughout the park resulting from potential management actions for each alternative.

Visitor Services

The analysis identified how potential management actions under the various alternatives would affect visitor services provided by the National Park Service, and the park partners, including the primary park concessioner. The services analyzed include all campgrounds (i.e., Merced Lake Backpackers Campground, Moraine Dome Backpackers Campground, Little Yosemite Valley Backpackers Campground, Camp 4, North Pines Campground, and Upper and Lower Pines Campgrounds), lodging (i.e., Yosemite Lodge, the Merced Lake High Sierra Camp, Housekeeping Camp, The Ahwahnee, Curry Village, and the Wawona Hotel), and food service and retail outlets in the Valley and in Wawona.

Wilderness Experience

Impact analysis associated with wilderness experience was based on whether there would be a change in opportunities for solitude and primitive recreation for visitors in the wilderness, and/or a change in the ability of the visitor to access the Yosemite Wilderness.

Impact Assessment

The assessment of potential impacts focused on the context, intensity, and duration of impacts that would result from the proposed management actions described for each alternative, relative to the four aspects of visitor experience, and whether those impacts were considered to be beneficial or adverse to visitor experience. The assessment looked specifically at whether access to or availability of some aspect of visitor experience would be altered.

Context. The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would be those that occur within Yosemite National Park or impacts specific to the river corridor, including the El Portal Administrative Site. Regional impacts would be impacts on the affected region, which is defined in Chapter IV, Affected Environment.

Intensity. The intensity of the impact considers whether the impact to visitor experience would be negligible, minor, moderate, or major. Negligible impacts were effects considered not detectable to the visitor and therefore expected to have no discernible effect. Minor impacts were effects that would be slightly detectable, though not expected to have an overall effect on the visitor experience. Moderate impacts would be clearly detectable to the visitor and could have an appreciable effect on the visitor experience. Major impacts would have a substantial, highly noticeable influence on the visitor experience and could permanently alter access to and availability of various aspects of the visitor experience.

Duration. The duration of the impact considers whether the impact would occur in the short term or the long term. A short-term impact would be temporary in duration or association with transition types of activities. It is not likely that there would be temporary visitor experience impacts associated with this plan. A long-term impact would have a permanent effect on the visitor experience, such as the permanent closure of a campground.

Type of Impact. Impacts were evaluated in terms of whether they would be beneficial or adverse to visitor experience. Beneficial impacts would allow greater access to or availability of a recreational opportunity, interpretation or orientation program, other visitor services, or to a wilderness experience. Adverse impacts would reduce access to or availability of these four aspects of visitor experience.

Social Resources

Land Use

For the purposes of an environmental analysis under NEPA and National Park Service guidelines on NEPA policies, land use within Yosemite National Park has the sole designation of public parklands. From the NEPA perspective, the public parklands land use designation includes the myriad of uses that may occur in a public park, including camping, hiking, parking, etc. Although the National Park Service is re-evaluating the management zoning in the El Portal segment of the Merced River corridor in the action alternatives, the management zones only designate management direction for particular areas within the park and do not change the basic land use of the park. This Revised Merced River Plan/SEIS addresses only the management of lands under National Park Service control within Yosemite National Park and the El Portal Administrative Site. The basic designation of land use for the park, as defined by NEPA, would not change as a result of implementing any alternative of this Revised Merced River Plan/SEIS.

The land use analysis assumes that National Park Service policy concerning the acquisition of private lands within or adjacent to the park would not change. Thus, there would be no difference in land use policies between the No Action Alternative and the action alternatives.

Impact Assessment

Proposed management actions under each alternative were evaluated in terms of the context, intensity, and duration of land use impacts, and whether the impacts were considered to be beneficial or adverse to existing land use patterns.

Context. The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would be those that occur at specific locations within the park. Regional impacts would be related to regional land use patterns. For the purposes of this document, it was assumed that land use impacts would be consistently local.

Intensity. The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts were effects considered not detectable and that would have no discernible effect on land use patterns or land use compatibility. Minor impacts were effects on land use patterns that would be slightly detectable but would not be expected to have an overall effect on those conditions. Moderate impacts would be clearly detectable and could have an appreciable effect on land use patterns or result in land use incompatibility. Major impacts would have a substantial, highly noticeable land use incompatibility or would result in substantial changes to land use patterns.

Duration. The duration of the impact considers whether the impact would occur in the short term or the long term. A short-term impact would be temporary in duration and would be associated with transitional types of activities. A long-term impact would have a permanent effect on land use patterns or land use compatibility.

Type of Impact. Impacts were evaluated in terms of whether they would be beneficial or adverse to land use patterns. Beneficial impacts would improve compatibility among land uses. Adverse impacts would negatively alter land use patterns or result in new land uses that would not be compatible.

Transportation

The focus of this impact assessment was on the effect of potential management actions on traffic volumes and associated traffic flow and safety conditions. It was assumed that current alternative transportation services (regional public transit, shuttle buses, or Valley floor tours, etc.) would remain essentially unchanged under this plan. Given the programmatic nature of this plan, it was assumed that the plan would not result in any substantial, quantifiable construction activity. It was also assumed that the park would continue to implement restricted access to Yosemite Valley during peak season periods when criteria for implementation were met.

Quantitative analysis of potential effects was not feasible for this impact assessment due to the programmatic nature of the plan. Rather, analysis of effects was qualitative, and professional transportation engineering judgment was applied to reach reasonable conclusions as to the context, intensity, and duration of potential impacts. When possible, mitigation measure(s) were incorporated into the plan to reduce the intensity of adverse effects.

Traffic Flow Conditions

This section assessed potential changes in traffic volumes associated with changes to in-park visitor accommodations and/or parking facilities that could result from implementation of management action described for each alternative. Changes in traffic volumes were then judged as to whether they would substantially change the levels of congestion on the roadway system serving Yosemite National Park.

Traffic Safety/Conflicts

This section assessed potential changes in parking facilities (location and number of parking spaces) that could result from implementation of management actions for each alternative. Possible changes in parking availability (e.g., parking supply could be reduced, with resulting unmet parking demand being accommodated by visitors parking their vehicles at roadside locations) were then judged, in the context of prevailing traffic volumes, as to whether increased roadside parking would substantially affect the potential for traffic conflicts.

Impact Assessment

Proposed management actions for each alternative were evaluated in terms of the context, intensity, and duration of the transportation impacts, and whether the impacts were considered to be beneficial or adverse to traffic flow or traffic safety conditions.

Context. The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would be those that occur within Yosemite National Park or specific to the river corridor, including the El Portal Administrative Site. Regional impacts would be impacts on regional highways providing access to the park.

Intensity. The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts were effects considered not detectable and that would have no discernible effect on traffic flow or traffic safety conditions. Minor impacts were effects on traffic flow or traffic safety conditions that would be slightly detectable but would not be expected to have an overall effect on those conditions. Moderate impacts would be clearly detectable and could have an appreciable effect on traffic flow or traffic safety conditions. Major impacts would have a substantial, highly noticeable influence on traffic flow or traffic safety conditions and could permanently alter those conditions.

Duration. The duration of the impact considers whether the impact would occur in the short term or the long term. A short-term impact would be temporary in duration and would be associated with transitional types of activities. A long-term impact would have a permanent effect on traffic flow and/or traffic safety conditions.

Type of Impact. Impacts were evaluated in terms of whether they would be beneficial or adverse to traffic flow or traffic safety conditions. Beneficial impacts would improve traffic flow and traffic safety by reducing levels of congestion and occurrences of vehicle/vehicle, vehicle/bicycle, and vehicle/pedestrian conflicts. Adverse impacts would negatively alter traffic flow and traffic safety by increasing levels of congestion and occurrences of such conflicts.

Scenic Resources

The scenic resources analysis assumes that any management action taken under each alternative would conform with the National Park Service 1916 Organic Act. For the purposes of this analysis, management actions for each alternative would be assumed to have an impact (negative or beneficial) on scenic resources if they:

- Introduce into or remove from the visual landscape any human-built structure or infrastructure, as it is viewed from within the Merced River corridor
- Substantially change the quality of the visual landscape, whether foreground, intermediate ground, or background
- Affect perceived viewer sensitivity, which is a function of the extent to which viewer activity is dependent on visual quality. This would include the viewer's experience in seeing any single viewpoint and in moving through a sequence of viewpoints, such as would be experienced in hiking along the river

The scenic resources analysis is confined to an examination of the physical effects on viewsheds and on physical attributes of landscape features that define important views. The ability of a visitor to enjoy a particular visual landscape or sequence of landscapes also is affected by the quality of the air between the viewer and the landscape. The effect of air quality on visual resources, specifically visibility, is examined in the air quality section.

Impact Assessment

The overriding management purpose of any national park, as defined by the National Park Service 1916 Organic Act, is to conserve the scenery and natural and historic objects. Following this direction, the National Park Service determines impacts on scenic resources by examining the potential effects of each alternative on both the physical component (any change to the landscape character and/or features) and with respect to how that change is experienced (any change in visibility, viewpoints, etc.).

Impacts of the various alternatives and the associated management actions on visual resources are examined and determined by:

- Comparing the existing visual character of the landscape, characterized in terms of the color, textural scale, and formal attributes of landscape components and features, and the degree to which potential management actions under each alternative would affect (i.e., contrast or conform with) that character
- Analyzing changes in experiential factors, such as whether a given action would result in a visible change, the duration of any change in the visual character, the distance and viewing conditions under which the change would be visible, and the number of viewers that would be affected

Scenic resources impacts consist of a substantial change that would: (a) change existing landscape character, whether foreground, intermediate ground, or background, and be visible from viewpoints the National Park Service has established as important; (b) change access to historically important viewpoints, or a sequence of viewpoints; or (c) change the visibility of a viewpoint or a sequence of viewpoints.

Context. The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts are site-specific to the scenic resource. Therefore, it was assumed that all scenic resource impacts would be local.

Intensity. Impacts are classified as negligible, minor, moderate, or major. The intensity of the impact depends both on the extent of the physical effect and the duration of that effect. A negligible impact would be barely perceptible and confined to a limited viewpoint. A minor impact would result in little change in existing landscape character and minor and temporary effects on viewers. A moderate impact would be noticeable to the viewer from one or more scenic viewpoints. A major impact would cause a substantial change in landscape character, a permanent change in access to viewpoints or sequence of viewpoints, or a permanent and substantial effect on visibility of a viewpoint or sequence of viewpoints.

Duration. The duration of the impact considers whether the impact would occur in the short term (e.g., temporary) or the long term (e.g., permanent).

Type of Impact. Impacts were evaluated in terms of whether the impact would be beneficial or adverse to the scenic resource. Beneficial impacts would improve the scenic resource. Adverse impacts would degrade the scenic resource.

Socioeconomics

The impacts analysis evaluated four separate socioeconomic areas: the social environment, visitor populations, the regional economy, and the primary park concessioner. Separate methodologies have been developed for each of these impact areas.

It is assumed that park overnighters who are potentially displaced from lodging in the park under the action alternatives would instead stay in the gateway communities as local overnighters. It is further assumed that in the short-term, some displaced park overnighters who may wish to lodge overnight in the region (as local overnighters) may not be able to due to a lack of lodging capacity in the gateway region, particularly during the peak season. In the long term, however, it is assumed that the regional lodging market would respond to visitor demand, and those displaced park overnighters would become local overnighters.

Quantitative analysis of potential effects on socioeconomic conditions was not feasible due to the programmatic nature of the plan. Rather, analysis of effects was qualitative, and professional judgment was applied to reach reasonable conclusions as to the context, intensity, and duration of potential impacts. When possible, mitigation measures were incorporated into the plan to reduce the adverse effects of socioeconomic impacts.

Social Environment

This section analyzed potential changes to the social environments of the communities of Yosemite Valley, El Portal, and Wawona, including housing, employee commute, community amenities, and recreational opportunities associated with the potential management actions under each of the action alternatives.

Visitor Populations

The analysis identified potential changes in park visitor accommodations that could result from implementation of management actions under each alternative. This section described changes in the composition of Yosemite visitors (e.g., park overnighters, local overnighters, and day visitors) and qualitatively addressed potential changes in visitor spending.

Regional Economy

This section qualitatively analyzed the impacts of changes in visitor spending and shifts in employment associated with the potential limits on park accommodations and other facilities. Due to the qualitative nature of the analysis, these impacts were addressed in terms of the affected region as a whole, and not at the individual county level.

Concessioner

The analysis identified how potential management actions under each alternative would affect facilities operated by the primary park concessioner. The analysis assumed that these facilities could be removed or reduced, and analyzed the impact on concession revenues.

Impact Assessment

Proposed management actions under each alternative were evaluated in terms of the context, intensity, and duration of the socioeconomic impacts, and whether the impacts were considered to be beneficial or adverse to the socioeconomic environment.

Context. The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would be those that occur within Yosemite National Park or specific to the river corridor, including El Portal. Regional impacts would be impacts on the affected region, which is defined in Chapter IV, Affected Environment.

Intensity. The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts were effects considered not detectable and that would have no discernible effect on the socioeconomic environment. Minor impacts were effects on the socioeconomic environment that would be slightly detectable but would not be expected to have an overall effect. Moderate impacts would be clearly detectable and could have an appreciable effect. Major impacts would have a substantial, highly noticeable influence on the socioeconomic environment and could permanently alter the socioeconomic environment.

Duration. The duration of the impact considers whether the impact would occur in the short term or the long term. A short-term impact would be temporary in duration and would be associated with transitional types of activities. A long-term impact would have a permanent effect on the socioeconomic environment.

Type of Impact. Impacts were evaluated in terms of whether the impact would be beneficial or adverse to the socioeconomic environment. Beneficial socioeconomic impacts would improve the social or economic conditions in the park or in the affected region. Adverse socioeconomic impacts would negatively alter social or economic conditions in the park or in the affected region, or would affect low-income populations.

Park Operations and Facilities

Impacts associated with potential management actions taken under each alternative were determined by examining:

- Direct changes to staffing requirements, and policies associated with park operations

- Indirect effects of park operations staffing, such as effects on utility and roadway infrastructure, flooding, and provision of utilities, especially potable water and sewer services
- Direct increases in energy use and conservation policies caused by changes in park operations staffing, or policies

Impact Assessment

Potential management actions for each alternative were evaluated in terms of the context, intensity, and duration of impacts to park operations and facilities, and whether the impacts were considered to be beneficial or adverse to park operations and facilities.

Context. The context of the impact considers whether the impact would be local or regional. For the purposes of this analysis, local impacts would be those that occur within Yosemite National Park or specific to the river corridor, including El Portal. Regional impacts would be impacts that occur throughout the Sierra Nevada region. For the purposes of this analysis, it was assumed that all impacts would be local.

Intensity. The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts were effects considered not detectable and that would have no discernible effect on park operations and facilities. Minor impacts were effects on park operations and facilities that would be slightly detectable but would not be expected to have an overall effect on the ability of the park to provide services and facilities. Moderate impacts would be clearly detectable and could have an appreciable effect on park operations and facilities. Major impacts would have a substantial, highly noticeable influence on park operations and facilities and include those impacts that would reduce the park's ability to provide adequate services and facilities to visitors and staff.

Duration. The duration of the impact considers whether the impact would occur in the short term or the long term. A short-term impact would be temporary in duration and would be associated with transitional types of activities. A long-term impact would have a permanent effect on park operations and facilities.

Type of Impact. Impacts were evaluated in terms of whether they would be beneficial or adverse to park operations and facilities. Beneficial impacts would improve park operations and/or park facilities. Adverse impacts would negatively affect park operations and/or facilities and could impede the park's ability to provide adequate services and facilities to visitors and staff.

Alternative 1: No Action

Natural Resources

Geology, Geohazards, and Soils

Analysis

Under Alternative 1, park would implement existing user capacity program, including the elements of the Merced River Plan (boundaries, classifications, Outstandingly Remarkable Values [ORVs], management zoning prescriptions, and River Protection Overlay), legal mandates, the *General Management Plan*, and other park policy documents. Geologic processes/conditions ORVs include the mature, meandering nature of the Merced River through Yosemite Valley, a classic V-shaped river through the gorge, evidence of ice-age glaciation (U-shaped and hanging valleys), extraordinary granite features (e.g., exfoliation domes), and the transition from igneous to metasedimentary rocks in the El Portal area. The following discussion provides an overview of the types of geologic impacts that could occur within the Merced River corridor under Alternative 1 in 2020 compared with existing conditions.

Rockfall Hazards. Rockfalls can be expected throughout Yosemite National Park in any area that has steep rock cliffs. Under Alternative 1, mass movement from unstable rock slopes would continue to result in rockfalls, debris flow, and rock avalanches, exposing visitors to potential injury and facilities to damage. Along the Merced River, rockfalls can occur in the upper wilderness reaches, along the edges of Yosemite Valley, within the gorge, and along the South Fork where the river is contained within canyons. Most rockfalls are associated with triggering events such as earthquakes, climatic changes such as rainfall events, or gradual stress release and exfoliation of the granite. Incidents of injury to visitors and damage to facilities from rockfall hazards are most likely to occur in the developed valley and canyon areas of the Merced River and South Fork corridor, such as in Yosemite Valley, the Merced River gorge along the El Portal Road, El Portal Administrative Site, and possibly in Wawona. The risk of rockfalls to visitors and facilities is considered low in the less-traveled and undeveloped wilderness areas, although rockfalls do occur throughout the park. Facilities located within proximity of the talus zone or within the rockfall shadow zone are most susceptible to damage from rockfalls. Rockfall frequency in the talus zone can be yearly to every several decades; risks posed by rockfalls include casualties and structural damage. Avoiding all rockfall-related risk is not possible, especially in narrow, steep valleys or canyons. The configuration of the Yosemite Valley walls and relatively narrow canyons suggest there are no "safe" areas within areas susceptible to rockfall risks (USGS 1998).

In the short term, management of user capacity in the river corridor under Alternative 1 would have no impact related to rockfall hazards. Current park management policies and the *Yosemite Valley Geologic Hazard Guidelines* (Appendix C in NPS 2000e), which require most new facilities and uses to be placed outside the talus zone and the rockfall shadow zone, would continue to be implemented, and levels of visitation would be similar to existing levels. Therefore, there would be no discernible increase in exposure of visitors or facilities to rockfall hazard. In the long term, however, visitation levels under Alternative 1 could reasonably be expected to increase until facility or utility capacities were reached. Such an increase would result in an increase in the number of park users exposed to rockfall hazards. Long-term impacts associated with an increase in the number of visitors exposed to rockfall hazards would be local, negligible to minor depending on future visitation levels), and adverse.

Seismic Hazards. Yosemite National Park is susceptible to earthquake ground shaking generated in seismically active zones on the east and west margins of the Sierra Nevada. Historically, seismic events in the Sierra Nevada and Yosemite National Park have been relatively infrequent; however, when they do occur, the resultant ground shaking is capable of triggering rockfalls and producing ground accelerations that are higher than some older, less structurally stable buildings can tolerate. Typically, risks of injury to visitors and damage to facilities from seismic events would be relatively greater in the developed portions of Yosemite National Park, such as Yosemite Valley, El Portal, and Wawona, compared with less developed and more remote areas. Buildings and other facilities placed within saturated alluvial soil could also be susceptible to secondary hazards from seismic ground shaking, including liquefaction and seismically induced settlement. Earthquakes are unavoidable, and those in the Sierra Nevada region would continue to expose visitors to potential hazards from ground shaking.

In the short term, management of user capacity in the river corridor under Alternative 1 would have no impact related to seismic hazards. Current park management policies and the *Yosemite Valley Geologic Hazard Guidelines* would continue to be implemented, and levels of visitation would be similar to existing levels. Therefore, there would be no discernible increase in exposure of visitors or facilities to seismic hazards. In the long term, however, visitation levels under Alternative 1 could reasonably be expected to increase until facility or utility capacities were reached. Such an increase would result in an increase in the number of park visitors who would be exposed to the effects of seismic ground shaking in the event of an earthquake. Long-term impacts associated with an increase in the number of visitors exposed to seismic hazards would be negligible to minor (depending on future visitation levels), and adverse.

Impacts to Soils. Management zoning prescriptions, implementation of the River Protection Overlay, protection of certain biological ORVs, implementation of the trailhead quota system, and other management tools implemented or available under Alternative 1 would continue to protect soils from excessive disturbance, erosion, or compaction along most of the 81-mile river corridor. However, visitor use in certain areas of Yosemite National Park can adversely affect soils by contributing to erosion, soil compaction, and removal of surface soils. Compaction of native soils can result from concentrated visitor use in localized areas or excessive vehicular traffic in unpaved areas. Excessive surface water runoff or loss of protective vegetation cover can cause erosion. Under management zoning for Alternative 1, specific segments of the Merced River, especially those zoned Developed (3A-3C), would continue to be subjected to such concentrated visitor use, resulting in continued erosion and compaction in these areas. Visitor use in the upper wilderness reaches and undeveloped areas adjacent to the main stem and South Fork of the Merced River would continue to be less concentrated and limited by the existing trailhead quota system, management zoning, and other applicable park management plans and guidelines; therefore, concentrated visitor use would not intensify impacts to soil resources in these areas. In addition, under Alternative 1, areas within and adjacent to the river corridor that have been restored and rehabilitated could be closed under the authority of the Superintendent's Compendium. Park management could also take certain actions under the user capacity program in response to data showing the need to protect resources (for example, closing a beach to commercial raft removal to protect the riverbank). Protection of certain biological ORVs within the River Protection Overlay, such as riverine and wetland habitat, also serve to protect soils in these areas. However, current use of well-developed and well-traveled areas within the park would continue to cause erosion and compaction. Continued river access would result in increased erosion, removal of vegetation, and decreased soil stability.

Under Alternative 1, existing management policies would continue to be implemented, and, in the short term, levels of visitation would be similar to existing levels. In the short term, current management of user capacity in the river corridor outside El Portal would have a negligible adverse impact due to the incremental effects of ongoing concentrated use with respect to soil erosion and compaction. In the long term, visitation levels under Alternative 1 would be expected to increase until facility or utility capacities were reached. However, no increases would occur within wilderness areas because the trailhead quota system would remain in effect. Such an increase would exacerbate the adverse effects of concentrated visitor use on park soils in certain areas zoned for relatively high use. Existing policies and programs to protect park resources and values under Alternative 1 would moderate the effects of future increases in park visitation in these areas and thus would reduce the extent of the adverse impact on park soils. Long-term impacts on park soils associated with an increase in the number of visitors by 2020 would be negligible to minor (depending on actual future visitation levels), and adverse.

The boundary for the El Portal segment of the river in Alternative 1 is defined by the 100-year floodplain or the River Protection Overlay, whichever is greater. Land within the boundary is zoned for Park Operations and Administration (3C) within developed areas and Day Use (2C). Under this alternative, future development could occur outside the river boundary within the El Portal Administrative Site, consistent with the legislative intent for the site. Temporary construction-related erosion could occur during periods of rain, while soil is exposed, and prior to the site restoration and cleanup phases of future projects. Erosion and soil loss typically occur immediately after initial site grading or following construction or a fill slope with exposed soil. Mitigation measures common to all alternatives (listed in Appendix B) include preparation, prior to commencement of any construction activities, of a stormwater pollution prevention plan to control erosion and sedimentation, and implementation of and compliance with all operational requirements in the plan during construction. With implementation of a stormwater pollution prevention plan during construction, erosion and soil loss associated with grading and construction activities would result in a local, short-term, minor, adverse impact. Long-term soil degradation would be minimal due to erosion controls and the intermittent nature of the grading activities. Implementation of the mitigation measures would reduce adverse effects on soils at the El Portal Administrative Site to negligible to minor.

Summary of Alternative 1 Impacts. Considering the unpredictable and unavoidable nature of rockfalls and earthquakes in conjunction with an expected, albeit limited, increase in park visitation over the long term, there would be a local, long-term, negligible to minor, adverse impact on public safety from geohazards, including rockfall and seismic ground shaking. Considering the ongoing effects of more concentrated visitor use that would occur in some areas of the river corridor, there would be a local, short-term and long-term, negligible to minor, adverse impact on soil resources due to erosion, compaction, and soil removal. However, current park management policies would continue to enhance and protect the geologic processes/conditions ORVs within the individual river segments.

Cumulative Impacts

Cumulative impacts related to geohazards and soil resources are based on analysis of past, present, and reasonably foreseeable future actions, in combination with potential effects of this alternative. The projects identified below include only those projects that could affect geologic resources within the Merced River corridor or in the park vicinity.

Rockfalls would remain an unavoidable and unpredictable hazard within Yosemite Valley, the gorge, and other areas along the river corridor. Actions proposed in the *Yosemite Valley Plan* would remove and relocate facilities from the base of the talus zone, consistent with the *Yosemite Valley Geologic Hazard Guidelines*. For example, plans proposed under the Curry Village and East Yosemite Valley Campgrounds Improvements and Curry Village Employee Housing projects incorporate the placement of essential, special, and standard facilities outside the base of talus and rockfall shadow zones, as appropriate. Although rockfall hazards cannot be eliminated, the *Yosemite Valley Plan* would remove the most hazard-vulnerable facilities, thereby resulting in a regional, long-term, minor, beneficial impact.

Earthquakes are unavoidable and unpredictable and represent a potentially long-term, adverse impact to public health and safety. However, past, present, and reasonably foreseeable future actions would result in a local, long-term, minor, beneficial cumulative impact to public health and safety with respect to seismic hazards, due to the efforts of the National Park Service to apply current building codes and consider geologic and seismic hazards in planning and management activities. These efforts protect site facilities in areas that could be directly affected by ground failure.

Although certain past, present, and reasonably foreseeable future projects proposed within the park and vicinity would increase soil degradation during construction activities or due to increased development, many park projects, especially those included in the *Yosemite Valley Plan*, contain restoration elements to protect valuable soil resources. Full implementation of the *Yosemite Valley Plan* would restore approximately 177 acres of soils, of which approximately 136 acres would be high-value resource soils. Future ecological restoration projects include the Visitor Use and Floodplain Restoration Program, which involves the ecological restoration of six campgrounds, Housekeeping Camp, and The Ahwahnee tennis court. The current ecological restoration project at Cook's Meadow involved the removal of an abandoned roadway and will be complete upon the construction of a boardwalk to provide meadow access while allowing the free flow of water in the meadow and protecting vegetation and soils. Past restoration projects included the Merced River Ecological Restoration at Eagle Creek, which involved restoration of the eroded creek channel, revegetating the creek banks, and redirecting visitor traffic to minimize bank erosion. The Lower Yosemite Fall Project removes a parking lot and restores it to natural conditions. The Happy Isles Gauging Station Bridge Removal and Cascades Diversion Dam Removal projects restored to a substantial degree the free-flowing condition in these areas, thus helping to reduce riverbank erosion. However, some cumulative actions could result in short-term or long-term degradation of soil resources; such projects include construction of campgrounds, lodging, employee housing, roadway rehabilitation projects, and other facilities. Although these types of projects could have site-specific, short-term, adverse effects (e.g., potential short-term construction erosion and soil loss), a key objective of each of these projects is to reduce soil degradation and better manage natural resources.

Although rockfalls are unpredictable and unavoidable by nature, rockfall and earthquake hazards under Alternative 1 and the cumulative projects would result in a local, long-term, minor, beneficial impact to public safety in Yosemite National Park and the El Portal Administrative Site. These beneficial effects would be the result of efforts by park management to relocate critical facilities outside the talus slope and rockfall shadow zones, to avoid construction of new facilities in these hazard areas, and to conduct appropriate geotechnical studies prior to construction of facilities on soils susceptible to seismic ground shaking. Ongoing management programs would limit the increase in future visitation, thereby limiting the increase in the numbers of users exposed to geohazards under Alternative 1 and the cumulative projects. The overall cumulative actions in combination with Alternative 1 would result in a net regional, long-term, minor, beneficial impact on soil resources.

Impairment

Alternative 1 would have a local, short-term and long-term, negligible to minor, adverse impact on geologic resources and soils. Although soil resources are a key natural resource component within Yosemite National Park, the effect of this alternative on soils would occur in very localized areas and would not be considered severe. The extent and quality of soil resources throughout most of the Merced River corridor would remain high. Therefore, Alternative 1 would not impair geologic resources for future generations.

Hydrology, Floodplains, and Water Quality

Analysis

The following discussion provides an overview of the types of impacts to hydrology, floodplains, and water quality that could occur within each segment of the Merced River corridor under Alternative 1, the No Action Alternative. Under Alternative 1, user capacity within the river corridor would be managed as it has been in the past, as identified and described in the park's *General Management Plan* and other current park policy and guideline documents (see Table III-1). When visitor demand exceeds infrastructure capacities or when resources are being adversely affected, the park implements proactive measures and, in certain circumstances, specific restrictions to provide adequate protection for visitors and affected resources.

Impacts in Wilderness. The hydrologic processes ORV in the Wilderness segment includes the river's free-flowing character and excellent water quality. The ORV description also notes the river gradient, natural conditions (e.g., glacial remnants, a logjam in Little Yosemite Valley), and numerous cascades. Of the qualities described for the ORV, most are relatively insensitive to user-related impacts, with the exception of water quality. Water quality in the Wilderness segments is considered to be excellent.

User capacity within Wilderness segments of the Merced River would be addressed through the continued implementation of the trailhead quota system and periodic monitoring of wilderness resource conditions. If it is determined through monitoring that some areas are experiencing degradation due to overuse, park management would take proactive measures to restore resources and help prevent further damage.

In wilderness areas zoned Untrailed (1A) and Trailed Travel (1B), no new structures such as utilities, bridges (other than minor footbridges), and commercial overnight facilities are to be constructed. As such, Alternative 1 would not affect the floodplain or its ability to accommodate flood flow. Furthermore, visitation to the Wilderness segments of the river corridor is seasonal in nature and is controlled through the park's existing trailhead quota system. Visitor use in wilderness areas would continue to be limited; therefore, the effects to water quality, floodplain values, and related hydrologic processes as a result of soil compaction in the floodplain and soil erosion in wilderness areas are expected to be negligible.

Under Alternative 1, areas of more concentrated use in areas zoned Heavy Use Trail (1C) and Designated Overnight (1D) during the summer, such as along trails leading to Little Yosemite

Valley and the vicinity, Backpackers Campground, Moraine Dome, and Merced Lake High Sierra Camp, would continue to experience current use patterns. Thus, localized, long-term, negligible to minor, adverse impacts to the hydrologic processes ORV associated with a reduction in water quality (due to soil compaction in floodplain areas) and soil erosion (as a result of these use patterns) would continue in these areas.

The continued removal of up to 3,000 gallons per day of water from the Merced River to support functions at the Merced Lake High Sierra Camp during the summer when this camp is open to the public represents a very small amount of the daily flow volume of the river in this area. Therefore, this withdrawal represents a negligible impact to the river's hydrologic processes at or downstream of the point of withdrawal.

Overall, visitor use in Wilderness segments of the river is expected to continue to have long-term, negligible impacts on hydrology, water quality, and the hydrologic processes ORVs.

Impacts in Yosemite Valley. The hydrologic processes ORVs in Yosemite Valley include the river's meandering character, world-class waterfalls, an active flood regime, oxbows, unique wetlands, and fluvial processes. Under Alternative 1, impacts resulting from historic bridges and other existing obstructions would continue to impede the free-flowing condition of the Merced River and subsequently alter stream processes that define channel characteristics. These restrictions to natural fluvial processes adversely affect the ability of the river to naturally discharge and dissipate channel-forming flows or flood flow. Streamflow would continue to be altered, thereby affecting the free-flowing nature of the river between the Happy Isles area and Pohono Bridge.

Beginning in the late 1800s and continuing to the mid 1900s, the Merced River floodplain was altered by development in the river corridor, particularly in the east Valley. Structural and recreational development has resulted in impervious surfaces, creation of flow barriers, and loss of vegetative cover, thus altering floodplain characteristics and the interaction between the floodplain and periods of high river flow. Under Alternative 1, the 100-year flood regime and floodplain formation and evolution, which are ORVs of the river, would continue to be altered by past developments and existing structures that were constructed prior to the river's designation as Wild and Scenic.

Visitor use has affected parts of the floodplain by compacting soils, reducing vegetative cover, altering streambanks, and inducing erosion. The continued use of streambanks and floodplains by park visitors would continue, particularly in more concentrated areas of use such as east Yosemite Valley. However, efforts by park management in more recent years have implemented numerous restoration efforts and installed boardwalks in some area, which has helped to minimize impacts to these floodplain resources.

Roadways, structures, and visitor-use areas would continue to be present in the floodplain and would be subject to flood hazards under this alternative. Executive Order 11988 on floodplain management and the *Floodplain Management Guidelines* (NPS 1993b) provide guidance for the protection of natural floodplain values and of life and property in the National Park System. For future structures, the National Park Service must avoid construction of facilities in a floodplain if alternative locations are available. Where no alternatives exist, policies allow construction of structures, such as day-visitor parking lots, picnic areas, and campgrounds, if risks to human life and property are studied and then minimized or mitigated through design. Other facilities such as medical facilities, schools, and fuel storage facilities are to be located outside the 500-year floodplain. Therefore, under Alternative 1, existing flood hazards could remain, whereas future flood hazards would be precluded or mitigated for any new facility construction in the floodplain.

During the warmer summer months when visitor use increases, water temperatures are higher, and the streamflow is lower than at other times of the year. Water quality at times can be adversely affected through the introduction of refuse and human-associated pollutants from visitors using the river and from high visitor use along streambanks and adjacent floodplain areas, particularly during summer weekends and holidays when visitor use peaks.

Roads, parking lots, and other impervious surfaces in or near the corridor can also release nonpoint-source pollutants into stormwater runoff that would subsequently be discharged to the river. These surfaces also accumulate refuse and other pollutants discarded by park visitors that could also degrade water quality in the Valley.

Current management zoning prescriptions, coupled with the more restrictive River Protection Overlay and other existing park management policies provide restrictions on visitor use that help control certain activities in the river corridor. Restorative elements of the program allow degraded streambanks and floodplain areas to recover. As a result, the hydrologic processes, floodplain values, and water quality in the Yosemite Valley are not expected to degrade below current levels.

Impacts in the Gorge. The hydrologic processes ORV for the Gorge segment is characterized by an exceptionally steep river gradient. The river in the Gorge is, in most places, difficult for visitors to safely access and has limited or no floodplain areas. These features are insensitive to visitor uses, and Alternative 1 would have no impact on this ORV.

Facilities and visitor use in the majority of the Gorge segment are minimal due to the topography and limited access. In addition, the river's steep gradient makes use of the river by visitors dangerous, even in periods of lower river flow. However, water quality and the hydrologic processes would continue to be adversely but negligibly affected by existing facilities, adjacent roads, turnouts, stormwater runoff, and riprap. These adverse impacts are expected to be slightly greater in the summer, when river flows are lower and visitor use is higher. Impacts to floodplains, water quality, and hydrologic processes in these areas would continue to be localized and long-term but negligible.

Impacts in El Portal. The hydrologic processes ORV for El Portal are related to the seasonally continuous rapids in that segment. This ORV is not readily affected by the river corridor boundary, the management zoning, or visitor use.

In El Portal, a bulk storage facility for petroleum fuels and a gas station would continue operation, as would transportation of fuels along Highway 140 adjacent to the river. The risk of a fuel release would remain, but would be mitigated by compliance with standard regulatory requirements for the transportation and storage of such materials and normal park operations and maintenance procedures. A release of fuel would constitute a short-term, adverse impact to water quality.

The river corridor boundary for the El Portal segment is drawn at the River Protection Overlay or the 100-year floodplain, which ever is greater. The current management zoning includes Park Operations and Administration (3C) (56 acres) and Day Use (2C) (137 acres). This boundary and zoning plan allows additional development or redevelopment within the areas zoned 3C. This could result in a loss of vegetation, soil compaction, and/or paving, with a potential for increased erosion and increased runoff from developed areas, and local, long-term, minor, adverse effects on hydrology and water quality. In addition, some development could occur within the floodplain, resulting in a local, long-term, minor, adverse effect on floodplain values.

Impacts in Wawona. The impoundment near Wawona has excellent water quality, which is a hydrologic processes ORV. The Wawona segments do not represent a hydrologic processes ORV, but the Below Wawona segment includes the free-flowing condition of the river and continual whitewater cascades which are ORVs. The ORVs for the below Wawona segment are not readily affected by visitor use and these features would continue to be protected under Alternative 1.

Until the historic Wawona Bridge (also called South Fork Bridge) and the temporary bridge are removed and replaced with a bridge designed to not impede the river flow (construction on a new bridge is scheduled to occur in 2005), these structures will continue to restrict the free-flowing conditions of the river and subsequently alter stream processes that define down-river channel characteristics. This will result in localized, minor to moderate, long-term, adverse effects to the hydrologic processes ORV at this location along the South Fork. Existing park management policies and elements of the existing Merced River Plan help ensure that the hydrologic processes ORVs are being protected and enhanced on a segment-by-segment basis for the Merced River corridor.

Summary of Alternative 1 Impacts. Hydrologic processes, floodplain values, and water quality are not expected to degrade below current levels; therefore, potential impacts of Alternative 1 to the hydrologic processes ORV in the river corridor are expected to be negligible.

Cumulative Impacts

Cumulative effects on hydrology, floodplains, and water quality are based on an analysis of past, present, and reasonably foreseeable actions in the vicinity of the Merced Wild and Scenic River corridor in combination with potential effects of this alternative.

Past Actions. The Merced River has been historically affected by a variety of projects that have introduced obstructions along its banks or into the river corridor; these obstructions have restricted river flow, modified the floodplain, and in some cases adversely affected water quality. The recent removal of the Happy Isles Gauging Station Bridge in east Yosemite Valley and the Cascades Diversion Dam in the Merced River gorge have substantially improved the free-flowing condition of the river and represent a cumulative, long-term, beneficial impact to the hydrologic processes ORV in these areas. However, the free-flowing condition of the Merced River has been adversely altered by the placement of fill and riprap to widen and stabilize segments A, B, and C of the El Portal Road in the gorge.

Present Actions. Utility infrastructure in east Yosemite Valley (primarily water and sewer lines) that is located in sensitive areas within the river corridor will be removed or abandoned in place; these utilities will be consolidated and realigned beneath roadways in many areas. In addition, numerous sewer lines that are currently exposed will be removed from the bed and banks of the river, reducing the potential for accidental discharges of sewerage to the river. This project will provide a cumulative, long-term, beneficial impact to the hydrologic processes ORV in the Valley.

The replacement of the South Fork Bridge near Wawona and the removal of the temporary bridge will remove abutments and piers from the bed and banks of the river. The new bridge has been designed to not impede the free-flowing condition of the South Fork and represents a cumulative long-term, beneficial impact to the hydrologic processes ORV Wawona.

Reasonably Foreseeable Future Projects. The *Yosemite Valley Plan* calls for numerous projects to be implemented within the river corridor Yosemite Valley, including the following:

- Curry Village and East Yosemite Valley Campgrounds Improvements
- Yosemite Lodge Area Redevelopment
- Yosemite Village Interim Parking Improvements
- Visitor Use and Floodplain Restoration Program Project
- El Portal Old Wastewater Treatment Facility Removal

Although these projects could have site-specific, minor, short-term, adverse effects (e.g., construction-related effects on water quality), the general goal of these projects is to increase coordinated resource management, restore sensitive ecosystems, and remove, redesign, and/or improve existing infrastructure. In addition to those projects listed above, reconstruction of Segment D of El Portal Road could cause similar types of short-term, construction-related impacts as occurred during the construction of segments A, B, and C (e.g., effects on water quality). However, adverse impacts associated with Segment D reconstruction could be partially mitigated through project design (the design of Segment D would need to protect and enhance the ORVs of the Merced River in this area) and implementation of Best Management Practices, compliance monitoring, and restoration activities. Each of the above reasonably foreseeable future projects will be designed and constructed compliant with Wild and Scenic Rivers Act requirements related to user capacity elements, river boundaries, management zoning prescriptions and ORV protection and enhancement as defined in the final Merced Wild and Scenic River Comprehensive Management Plan.

Therefore, these reasonably foreseeable future actions, in combination with Alternative 1, could have a net long-term, local, minor, beneficial effect to the hydrologic processes ORVs of the Merced River corridor.

Impairment

Impacts to hydrology, floodplains, and water quality associated with Alternative 1, as well as the hydrologic processes identified for the various segments of the river corridor, are expected to be negligible to minor. Therefore, Alternative 1 would not impair the hydrologic resources of the park for future generations.

Wetlands

Analysis

The following discussion provides an overview of the types of impacts to wetland resources that could occur within each segment of the Merced River corridor under Alternative 1.

Biological ORVs common to the entire Merced River (main stem and South Fork) include riverine habitats, such as riparian forests, meadows, and the aquatic environment. Under Alternative 1, park use would, in the short term, continue consistent with existing conditions. Implementation of the management elements adopted in the Merced River Plan would provide protection and a management framework for river-related wetland resources. However, without the benefit of the VERP program, the expected long-term increases in park use outside the wild segments of the river could result in adverse impacts to wetland resources. Wetlands in localized areas (i.e., near facilities or other high-use areas) would continue to be negatively affected by existing development and human and stock use. In general, existing development (most of which is historic, such a road systems) would continue to adversely affect wetlands. Future development allowed under Alternative 1 would also have a limited potential for adverse effects on wetlands, although such effects would be minimized by compliance with existing policies, guidelines, and restrictions pertaining to wetland protection (see Chapter III). Development in wetlands could fragment habitat and impose unnatural barriers to plant and wildlife movements, thereby adversely affecting seed sources, nutrients, and plant dispersal and distribution patterns. Other types of adverse effects associated with human and stock use include local degradation of water quality (e.g., through the introduction of refuse, fecal coliform bacteria, and other human- and stock-associated pollutants), and potential introduction or spread of noxious weeds. Grazing, trampling, and soil compaction and erosion can result in the loss of soil structure, vegetation diversity, and plant productivity. These continued actions would have long-term, local, adverse effects on wetlands in the vicinity of facilities and areas of concentrated use. The degree to which wetlands would be affected depends on their proximity to facilities and high-use areas, as well as their sensitivity to perturbation. Thus, wetland resources could be positively affected by localizing facility- and use-related impacts away from more sensitive areas. Under Alternative 1, current park management tools, including the Merced River Plan management zoning and a variety of wetlands policies and guidelines, provide mechanisms for such actions.

Impacts in Wilderness. Wetland and aquatic habitats of the upper Merced River and the Wilderness segments of the South Fork are generally intact. However, some adverse effects on wetlands resources have occurred in areas where visitor use is intense (e.g., in the vicinity of the Little Yosemite Valley Backpackers Campground, Moraine Dome Backpackers Campground, Merced Lake High Sierra Camp and Backpackers Campground, and along major trail routes).

The biological ORVs of the Wilderness segments of the Merced River include high riparian species diversity, wetlands themselves, riparian areas that are intact and largely undisturbed by humans, and a nearly full range of riverine environments typical to the Sierra Nevada. Management zoning in the upper main stem of the Merced River and the South Fork above Wawona reflects existing management practices and use levels based on the Wilderness Act along with federal and Yosemite National Park wilderness policies and guidelines. Existing wilderness trailhead quotas limit user capacity for wilderness areas of the park. Wilderness zoning severely limits the type of new facilities (thus serving to limit user capacity) that could be built under the No Action Alternative. For example, large campsites with facilities are prohibited in zone 1B. Although future actions such as trail rehabilitation could occur under the current zoning, any proposed actions would be subject to the consistent set of criteria and considerations (including the Section 7 determination process) mandated by the Wild and Scenic Rivers Act, which would guide how the actions could be implemented. While impacts in high use areas would continue, most wilderness areas would remain relatively untouched. Under Alternative 1, wilderness user capacity limits would not change, and the current wilderness monitoring system would remain in place. Therefore, implementation of Alternative 1 is expected to result in only local, long-term, negligible, adverse effects on wetland resources in Wilderness segments. On a segment-wide basis, wetland resources throughout the wilderness segment would be protected and enhanced.

Impacts in Yosemite Valley. The size, structure, productivity, and continuity of wetland habitats (within wetlands and between wetland and riverine habitat) and aquatic habitats within Yosemite

Valley have been affected over time by existing facilities and visitor use. Existing facilities such as roads, bridges, and ditches drain wet meadows, fragment the floodplain, and have adverse effects on wetland and aquatic habitats by imposing unnatural barriers to plant and wildlife movements, which in turn may accelerate both the drying of wetland habitats and conifer encroachment of wet meadow and riparian communities. These facilities were, for the most part, constructed many years prior to the Merced River's designation as Wild and Scenic. Existing roads, parking lots, and other impervious surfaces in or near the corridor are nonpoint sources of pollutants that discharge to low-lying wetlands as well as the aquatic habitat of the Merced River and its tributaries. Impervious surfaces accumulate automobile-related pollutants, refuse, and other nonspecific pollutants that are easily transported to adjacent or nearby wetland resources through stormwater runoff.

ORVs within Yosemite Valley include riverine habitats such as riparian forests, meadows, and the aquatic environment of the Merced River. Yosemite Valley is currently zoned to protect natural resources while providing a diverse visitor experience. Although large portions of the east Valley could remain developed under current zoning, the overall zoning (including the River Protection Overlay) of Yosemite Valley protects sensitive resources within the river corridor boundary (e.g., unique wetlands are zoned 2A, Open Space, which restricts activities and prohibits development of new roads and campgrounds). Valley zoning precludes several types of new development (e.g., new campsites are prohibited in the 2B, Discovery zone) where wetlands are located, while allowing such development in other zones. In addition, future actions (e.g., bridge removal, construction of new campsites) that could occur under the current zoning would be subject to the management elements adopted in the Merced River Plan, which guide how the actions could be implemented. The application of current zoning in combination with the other management elements adopted in the Merced River Plan would have short- and long-term, negligible, beneficial effects on wetlands and the biological ORVs in the Valley. However, the expected increase in park use under Alternative 1, combined with a lack of systematic monitoring, could result over time in local, long-term, minor, adverse effects on wetland resources and the biological ORVs in the Valley.

Impacts in the Gorge. Direct visitor intrusion into the majority of riparian areas of the Gorge segment has been and would continue to be minimal due to topography and inaccessibility. Biological ORVs of the Gorge segment include diverse riparian areas that are largely intact and relatively untouched by humans. The majority of the Gorge segment is zoned 2A, 2A+, and 2B, with less acreage zoned as 2C and 2D (the Cascades area). With the exception of the Cascades area, the majority of the gorge is relatively inaccessible, and visitor use in the gorge itself is unlikely to increase.

The riparian zone in the gorge would continue to be minimally affected by existing facilities, roads, turnouts, riprap, contaminated stormwater runoff, non-native species, and the use of nonmotorized watercraft (and associated visitor trampling at launch and removal locations). The riparian community throughout the Gorge, identified as a biological ORV, is indirectly and marginally affected by vehicle use on El Portal Road (and associated pollutants) and by non-native species. These continued effects on wetlands in the vicinity of facilities and areas of concentrated use would be long term, local, and adverse. The degree to which wetlands would be affected depends on their proximity to facilities and high-use areas, as well as their sensitivity to perturbation.

Gorge zoning under Alternative 1 precludes most types of new development (e.g., campgrounds and lodging, new roads) that have the potential to adversely affect wetlands. In addition, possible future actions that could occur under the current zoning would be subject to the consistent set of criteria and considerations adopted in the Merced River Plan as well as existing park management policies, which guide how the actions could be implemented. However, as described above, the expected increases in park use (resulting in higher traffic levels on El Portal Road and potentially higher levels of automobile-related pollutants in the area) under Alternative 1, combined with a lack of systematic resource monitoring could result in local, long-term, minor, adverse effects on wetland resources and the biological ORVs in the Gorge segment.

Impacts in El Portal. The biological ORVs of the El Portal segment include a diversity of riparian vegetation types. The total acreage included within the El Portal segment boundary under Alternative 1 would be 193 acres. This alternative would include primarily Park Operations and Administration (3C) zoning within existing developed areas and primarily Day Use (2C) zoning within undeveloped areas adjacent to the river. Of the 193 acres within the boundary, 137 acres would be zoned 2C and 56 acres (29% of the total acreage within the riparian corridor boundary) would be zoned 3C.

Examples of how the management elements of Alternative 1 would affect native wetlands and the biological ORVs of the El Portal segment are described below.

- Portions of El Portal zoned 3C (e.g., the Trailer Village, Old El Portal) would allow redevelopment as well as additional development (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Potential development could have both short-term (e.g., construction-related) and long-term (e.g., fire suppression in the vicinity of structures), minor to moderate, adverse effects on wetlands and aquatic habitats. Although application of mitigation measures described in Appendix B would reduce impacts, long-term, minor to moderate, adverse effects to wetlands (e.g., conversion of wetland vegetation to developed facilities) would remain.
- Areas of El Portal zoned 2C, including all areas within the River Protection Overlay and the Merced River 100-year floodplain, would allow only day uses and would restrict future development to supporting facilities such as roads, parking areas, trails, and utilities. Impacts resulting from the construction of such facilities would generally be localized. Any such development would be governed by existing mandates and guidelines pertaining to the protection of wetland resources (see Appendix A). Therefore, future development in zone 2C areas could have local, minor, adverse effects on wetland resources.

The zoning in El Portal could have short- and long-term, adverse effects on wetlands as the result of future actions that could be implemented under the proposed zoning (e.g., new park administration facilities, road repair). These impacts could be reduced through the application of mitigation measures described in Appendix B. The criteria and considerations (as well as other park policies and federal laws) would protect the biological ORVs. However, the increase in administrative use of the El Portal segment that could occur under Alternative 1, combined with a lack of systematic monitoring, could result in local, long-term, minor to moderate, adverse effects on wetland resources and the biological ORVs in parts of the El Portal segment.

Impacts in Wawona. Wetland and aquatic habitats within Wawona have been affected by historic facilities and visitor use. The size, structure, and productivity of wetland habitat as well as the continuity within wetlands and between wetlands and riverine habitat have decreased due to conifer encroachment, visitor trampling, spread of non-native species, continued use of existing development, and loss of natural drainage patterns due to roads and diversions. These effects are generally restricted to the limited areas of high visitor use within the Wawona segments and in the short term, these conditions would remain relatively constant.

In the long term, under Alternative 1, visitor use would continue to affect wetlands and aquatic habitat in high use areas by compacting soils, reducing vegetative cover, altering streambanks, and inducing erosion. Roads, parking lots, and other impervious surfaces in or near the corridor would continue to release nonpoint-source pollutants into stormwater runoff that could subsequently discharge to low-lying wetlands and the aquatic habitat of the South Fork.

Although the South Fork in Wawona has a variety of zones, ranging from 1B (Wilderness) to 3C (Park Operations and Administration), the base zones are low-intensity zones which mostly preclude new development, such as interpretive centers, food services, campgrounds and lodging, and day-visitor parking. The Wawona Golf Course and Wawona Picnic Area (2C), Wawona Campground (3A), Wawona Hotel (3B), and the Wawona maintenance facility (3C) allow a range of more intensive use levels consistent with existing development and uses. The zoning and continued use of these already developed sites is not expected to adversely affect local wetland resources.

Facilities within the River Protection Overlay, such as portions of the Wawona Campground and a portion of the Wawona maintenance facility would be inconsistent with the River Protection Overlay and could be removed or relocated. Local, short-term, negligible to minor, adverse effects to wetlands could occur if facilities were removed from the River Protection Overlay. These adverse impacts could be reduced to a negligible intensity by application of mitigation measures described in Appendix B. In the long term, facility removal could increase opportunities for natural revegetation and restoration of riparian habitat, resulting in a long-term, minor, beneficial impact on streamside (wetland) vegetation, a biological ORV for the Wawona segments.

Overall, the increase in park use under Alternative 1 combined with a lack of systematic monitoring could result in local, long-term, minor, adverse effects on wetland resources and the biological ORVs in the Wawona segment.

Summary of Alternative 1 Impacts. Compliance with existing park policies would help ensure that the biological ORVs related to wetlands are protected and enhanced. Under Alternative 1, continued application of limits on facilities development (through management zoning, the River Protection Overlay, and other Merced River Plan management elements) would allow many natural areas to remain relatively intact with continued protection and would allow restoration and enhancement of degraded native habitats. However, the expected long-term increase in park use would increase the intensity of visitor-related impacts, which, for the most part, would be restricted to areas of high intensity use (i.e., the east Yosemite Valley and El Portal). This, combined with a lack of systematic VERP monitoring, could result in local, long-term, minor to moderate, adverse effects on wetland resources and the biological ORVs in some portions of the Merced River corridor.

Cumulative Impacts

Cumulative effects to wetlands are based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with potential effects of this alternative. The projects identified below include those projects that have the potential to affect local wetland patterns (i.e., within the river corridor) as well as wetlands parkwide.

Past Actions. Aquatic and riparian systems are the most altered and impaired habitats of the Sierra Nevada and are relatively rare in the context of the entire landscape. Wetlands in the Sierra Nevada have been drained since the earliest settlers attempted to "reclaim" meadows and other seasonally wet areas. Mountain meadows were commonly drained with the intent of improving forage conditions and to permit agriculture (Hughes 1934, as in NPS 1997b, UC Davis 1996). Development and activity in Yosemite National Park has reduced historic wet meadow acreage by 60 to 65%. Past and ongoing activities include recreational use, agriculture, and the construction of dams, diversion walls, bridges, roads, pipelines, riprap, buildings, campgrounds, and recreational features. Dams and diversions throughout most of the range have profoundly altered stream-flow patterns and water temperatures. Within the mountains, broad valleys with wide riparian areas were often reservoir sites, and much of the best former riparian habitat in the Sierra Nevada is now under water. The extent of the inundation across the range becomes apparent when one realizes that virtually all flatwater on the western slope of the Sierra Nevada below 5,000 feet is artificial (UC Davis 1996). These past actions have had long-term adverse effects on regional wetland and aquatic habitats.

In 1991, the U.S. Forest Service and the Bureau of Land Management developed a joint *South Fork and Merced Wild and Scenic River Implementation Plan* (NPS 1991b) for the segments of the main stem and South Fork of the Merced River that are under their jurisdiction. The plan is also a general management plan with many prescriptive goals and few actions. The plan endeavors to limit or end consumptive uses such as grazing within the river corridor and calls for the formalization of camping and launch facilities for nonmotorized watercraft. Implementation of these actions has a beneficial effect by eliminating impacts where feasible (grazing does not currently occur within the river corridor), concentrating impacts in areas able to withstand visitor use, and providing facilities that mitigate adverse effects associated with visitor use (e.g., restrooms).

A number of recently implemented projects have begun to reverse the centuries-long pattern of wetland degradation caused by localized human uses in the region. These include:

- Merced River Ecological Restoration at Eagle Creek
- Happy Isles Fen Habitat Restoration
- Cascades Diversion Dam Removal
- Happy Isles Gauging Station Bridge Removal

These projects have had local, long-term, moderate to major, beneficial effects on wetlands because they involve the restoration of previously degraded areas and thus enhance local and regional wetlands. In addition to these specific projects, one of the major goals of the *Yosemite Valley Plan*, adopted by the National Park Service in December 2000, is to restore, protect, and enhance the natural resources of Yosemite Valley. Actions set forth in the plan that result in beneficial effects on wetlands include the removal of roads, facilities, and services in the Valley (including roads through Stoneman Meadow and the southern portion of Ahwahnee Meadow, most parking areas in the east Valley, and commercial trail rides in the Valley), the relocation of employee housing out of the Valley, and the establishment of wetland restoration objectives.

Other past actions that have likely had a cumulative, beneficial effect on regional wetlands includes transportation-related projects, which have the general goals of increasing transportation options and reducing reliance on automobiles in the area. In addition, the update to the *Fire Management Plan* (NPS 2004b) seeks to improve ecosystem health and restore meadows and therefore would have a regional, long-term, moderate to major, beneficial effect on Yosemite's wetland resources throughout the Merced River corridor.

Present Actions. Present actions in the region have the potential to result in both beneficial and adverse effects on wetland resources:

- The Cook's Meadow Ecological Restoration may help reverse the centuries-long pattern of wetland degradation due to localized human uses in the region.
- Additional current projects with net long-term, minor to moderate, beneficial effects on wetland resources (resulting from revegetation and habitat restoration efforts, control of competing invasive species, and improved air or water quality) include the Happy Isles Dam Removal, Lower Yosemite Fall, Parkwide Invasive Plant Management Plan, Utilities Master Plan/East Yosemite Valley Utilities Improvement Plan, South Fork Bridge Replacement, and Yosemite Valley Shuttle Bus Procurement Plan.
- Projects such as the Curry Village Employee Housing, Happy Isles to Vernal Fall Trail Reconstruction, the Yosemite Village Interim Parking Improvements, and Yosemite Motels Expansion could have short- and long-term, adverse effects on wetland resources through construction-related, operational, and maintenance actions.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into three general categories: (1) projects anticipated to have a net beneficial effect; (2) projects anticipated to have both beneficial and adverse effects; and (3) projects anticipated to have a net adverse effect.

Examples of projects that could have a cumulative, beneficial effect on regional wetlands include:

- Wawona Campground Rehabilitation
- Update to the *Yosemite Wilderness Management Plan*
- Tuolumne Meadows Concept Plan
- Tuolumne Wild and Scenic River Comprehensive Management Plan
- Visitor Use and Floodplain Restoration Program

Although each of these projects may have slight local and short-term adverse effects (e.g., construction-related effects), the general goal of these projects is to increase coordinated resource management and to restore sensitive ecosystems. Therefore, these projects could have a long-term, beneficial cumulative impact to regional wetlands. For example, the update to the *Yosemite Wilderness Management Plan* could result in additional restrictions on wilderness facilities and activities, reducing site-specific erosion, trampling, and possibly stock use.

Reasonably foreseeable projects that could have mixed adverse and beneficial effects on regional wetlands include:

- Curry Village and East Yosemite Valley Campgrounds Improvements
- El Portal Concept Plan
- Yosemite Lodge Area Redevelopment

Cumulative effects of these projects could be mixed, combining both adverse and beneficial effects. The net beneficial or adverse effects of these projects would be difficult to predict. For example, implementation of the El Portal Concept Plan could adversely affect wetland resources during construction (short-term effect) as well as permanently displace wetland resources in El Portal due to construction of new employee housing (long-term effect); however, removing employee housing and administrative facilities from Yosemite Valley (long-term, beneficial effect) would reduce these impacts as well as provide restoration opportunities. Adverse impacts associated with the El Portal Concept Plan could be mitigated to a lesser intensity through project design (the design would need to protect and enhance the ORVs of the Merced River), implementation of Best Management Practices, compliance monitoring, and restoration.

Reasonably foreseeable projects that could have local, adverse effects on wetlands include:

- Environmental Education Campus Development Program
- El Portal Road Improvements Project (Segment D)
- Indian Cultural Center
- Northside-Southside Drive Repaving
- Out-of-Valley Campground Plan
- Yosemite Village Interim Parking Improvements

Cumulative parkwide adverse effects would be primarily related to increased facilities and possible increases in visitor use and access. Each of the aforementioned projects has the potential to have local, minor to major, adverse effects on wetland resources during construction (short term) and through direct displacement of resources and effects of human use (long term). Examples of construction- and human-use-related effects on wetlands include direct displacement of vegetation, introduction of non-native species that invade into adjacent natural areas and displace native species, fragmentation of habitats that prevents genetic mixing, alteration of natural patterns, and increased erosion and sedimentation.

Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on wetlands and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 1, could have a net local, long-term, negligible, beneficial effect on parkwide wetlands and the biological ORVs of the Merced River corridor.

Impairment

Alternative 1 would have a local, long-term, minor to moderate, adverse effect on parkwide wetlands as well as the biological ORVs of the Merced River corridor and therefore would not impair wetland resources for future generations.

Vegetation

Analysis

The following discussion provides an overview of the types of impacts to vegetation resources that could occur within each segment of the Merced River corridor under the No Action Alternative.

Biological ORVs common to the entire Merced River (main stem and South Fork) include riverine habitats, such as riparian forests, meadows, the aquatic environment, and associated plant species. Under Alternative 1, park use would, in the short term, remain consistent with existing conditions. In general, adverse ongoing impacts to vegetation are confined to areas of high concentrations of use and near developed areas. Implementation of the management elements adopted in the Merced River Plan would provide protection and a management framework for river-related vegetation resources. However, without the benefit of the VERP program, the expected increase in use over time could result in new adverse impacts to vegetation resources. Adverse effects associated with human and stock use include local degradation of water quality (e.g., through the introduction of refuse, fecal coliform bacteria, and other human- and stock-associated pollutants), and potential introduction or spread of noxious weeds. Grazing, trampling, and soil compaction and erosion can result in the loss of soil structure, vegetation diversity, and plant productivity. The intensity of these adverse effects is expected to increase over time in conjunction with increases in park use except in the wilderness segments of the river, where Wilderness quotas will remain in place (day use of some more readily accessible wilderness trails could increase). The degree to which vegetation communities would be affected depends on their position relative to facilities and high-use areas, as well as their sensitivity to disturbance. Therefore, vegetation resources could be positively affected by localizing facility- and use-related impacts away from more sensitive areas. However, under Alternative 1, without implementation of the VERP program, effects on sensitive resources would not be systematically monitored. Therefore, park managers would not be receiving consistent and reliable data to inform management and planning decisions designed to protect, restore, and enhance sensitive vegetation resources that were being adversely affected by park use levels.

Impacts in Wilderness. Vegetation in the Wilderness segments of the Merced River is generally intact, except where visitor use is intense (e.g., in the vicinity of the Little Yosemite Valley Backpackers Campground, Moraine Dome Backpackers Campground, Merced Lake High Sierra Camp and Backpackers Campground, and along major trail routes). These facilities have existed for many years, long before the river's designation as Wild and Scenic.

High riparian species diversity in the Wilderness segments of the Merced River is a biological ORV. The upper main stem of the Merced River is zoned 1A, 1B, 1C, and 1D and the South Fork above and below Wawona is zoned 1A and 1B, reflecting management practices and use levels based on the Wilderness Act along with federal and Yosemite National Park wilderness policies and guidelines. The existing trailhead quota system limits user capacity for wilderness areas of the park. Wilderness zoning significantly limits the type of new facilities (thus serving to limit user capacity) that could be built under the No Action Alternative. For example, large campsites with facilities would be prohibited in zone 1B. In addition, the wilderness monitoring system would continue to provide data on the condition of vegetation in the wilderness segments. Although possible future actions (e.g., trail rehabilitation) could occur under current zoning, all proposed actions would be subject to the management elements adopted under the Merced River Plan and WIMS monitoring. On a segment-wide basis, the biological ORVs in the Wilderness segments of Yosemite National Park would be protected and enhanced.

Impacts in Yosemite Valley. Biological ORVs within the Yosemite Valley segment include riverine habitats such as riparian forests, meadows, and the aquatic environment of the Merced River. Yosemite Valley is zoned to protect natural resources while providing a diverse visitor experience (the Valley includes 1A, 1B, 2A, 2B, 2C, 3A, 3B, and 3C zoning). Large portions of the east Valley were developed prior to the river's designation as Wild and Scenic. Under the Merced River Plan, the overall zoning (including the River Protection Overlay) that now exists for Yosemite Valley protects sensitive resources within the river corridor boundary (e.g., unique wetlands are zoned 2A, Open Space, which restricts activities and prohibits development of new roads and campgrounds). Valley zoning precludes several types of new development (e.g., new campsites are precluded in the 2B, Discovery zone) that have the potential to adversely affect native vegetation, while allowing such development in other zones. In addition, possible future actions (e.g., bridge removal, construction of new campsites) that could occur under the current zoning would be subject to the management elements adopted in the Merced River Plan, which guide how the action could be implemented. However, future increases in park use under Alternative 1, combined with a lack of systematic monitoring or mechanisms by which to limit access or redirect visitor use in response to resource degradation, could result in local, long-term, minor to moderate, adverse effects on vegetation resources and the biological ORVs in the Valley.

Impacts in the Gorge. Biological ORVs in the Gorge segment include diverse riparian areas that are largely intact and relatively untouched by humans. The majority of the gorge is zoned 2A, 2A+, and 2B, with less acreage zoned as 2C and 2D (the Cascades area). With the exception of the Cascades area, the majority of the Gorge segment is relatively inaccessible, where visitor use is unlikely to increase over existing levels. Gorge zoning precludes most types of new development (e.g., campgrounds and lodging or new roads) that have the potential to adversely affect native vegetation. In addition, possible future actions that could occur under the current zoning would be subject to the management elements adopted in the Merced River Plan, as well as the management elements included in existing park management policies, which guide how the action could be implemented. However, the potential increase in use in parts of the Gorge segment under the No Action Alternative, combined with a lack of systematic monitoring or mechanisms by which to limit access or redirect visitor use in response to resource degradation, could result in local, long-term, minor, adverse effects on vegetation resources and the biological ORVs in the accessible portions of the Gorge segment.

Impacts in El Portal. Biological ORVs of the El Portal segment include a diversity of riparian vegetation types, as well as upland vegetation associations on the north-facing slopes of the river. The total acreage within the El Portal segment boundary under Alternative 1 would be 193 acres, which is equal to 17% of the total acreage included within the El Portal Administrative Site boundary. This alternative includes primarily Park Operations and Administration (3C) zoning within existing developed areas and primarily Day Use (2C) zoning within undeveloped areas adjacent to the river. Of the 193 acres within the riparian corridor boundary, 137 acres would be zoned 2C and 56 acres (29% of the total acreage within the riparian corridor boundary) would be zoned 3C.

Following are examples of how the management elements of Alternative 1 would affect native vegetation and vegetation-related biological ORVs in the El Portal segment. Those portions of El Portal zoned 3C (e.g., the Trailer Village, Old El Portal) would allow redevelopment as well as additional development (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Potential development could have both short-term (e.g., construction-related) and long-term (e.g., fire suppression in the vicinity of structures), minor to moderate, adverse effects on native vegetation. Although application of mitigation measures described in Appendix B would reduce impacts, long-term, minor to moderate, adverse effects to native vegetation (e.g., conversion of upland woodland or scrub vegetation to developed facilities) would remain in 3C areas.

The zoning in El Portal would allow additional development of park administration facilities as well as other actions such as road repair, which could have short- and long-term, adverse effects on native vegetation. The intensity of these impacts could be reduced through the application of mitigation measures described in Appendix B. Although the Merced River Plan management elements as well as other park policies and federal laws would protect biological ORVs, other vegetation resources (e.g., upland scrub or woodlands) could be adversely affected (long term, moderate). Overall, the increase in park administrative use allowed under Alternative 1, combined with a lack of VERP systematic monitoring, could result in local, long-term, minor to moderate, adverse effects on vegetation resources and the biological ORVs in portions of the El Portal segment.

Impacts in Wawona. The area in the immediate vicinity of Wawona has experienced past development prior to the Merced River's designation in 1987. Existing park infrastructure and facilities in this area include the Wawona Road, the Wawona Wastewater Treatment Plant and maintenance complex, an underground water and sewer utility corridor, employee housing, community amenities, campgrounds, the Pioneer Yosemite History Center and the Wawona Hotel and Golf Course.

Although the South Fork of the Merced River in Wawona has a variety of zones, ranging from 1B (Wilderness) to 3C (Park Operations and Administration), the base zones are 1B, 2A, and 2B. The 1B, 2A, and 2B zones preclude new development such as interpretive centers, food services, campgrounds and lodging, and day-visitor parking. The Wawona Golf Course and Picnic Area (2C), Wawona Campground (3A), Wawona Hotel (3B), and Wawona maintenance facility (3C) are zoned to allow a range of more intensive use levels consistent with existing development and uses. The zoning and continued use of these sites is not expected to adversely affect local vegetation resources in the short or long term.

Facilities within the River Protection Overlay, such as portions of Wawona Campground and a portion of the Wawona maintenance facility, would be inconsistent with the River Protection Overlay and could be removed or relocated. Local, short-term, negligible to minor, adverse effects to vegetation could occur during removal of any facilities from the River Protection Overlay. These adverse impacts could be reduced to a negligible intensity by applying mitigation measures described in Appendix B. Such removal or relocation of facilities could increase opportunities for natural revegetation and restoration of riparian habitat, resulting in a long-term, minor, beneficial impact on streamside vegetation, a biological ORV for the Wawona segments.

Overall, the increase in park use under Alternative 1, combined with a lack of systematic monitoring or mechanisms by which to limit access or redirect visitor use in response to resource degradation, could result in local, long-term, minor, adverse effects on vegetation resources and the biological ORVs in the Wawona segments.

Summary of Alternative 1 Impacts. Compliance with existing park policies would help ensure that the biological ORVs related to vegetation are protected and enhanced. Under Alternative 1, continued application of management zoning and the River Protection Overlay, in combination with the continued application of the management elements adopted in the Merced River Plan, would allow many natural areas to remain relatively intact and would direct restoration and enhancement of degraded native habitats. However, the estimated increase in park use over time would increase the intensity of visitor-related impacts for segments outside of Wilderness, where the existing quota system would continue to apply. This, combined with a lack of systematic monitoring or mechanisms by which to limit access or redirect visitor use in response to resource degradation, could result in local, long-term, minor to moderate, adverse effects on vegetation resources and the biological ORVs in some portions of the Merced River corridor.

Cumulative Impacts

Cumulative impacts to vegetation are based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with potential effects of this alternative. The projects identified below include those projects that have the potential to affect local vegetation patterns (i.e., within the river corridor) as well as large-scale or regional vegetation patterns.

Past Actions. In general, vegetation patterns of the Sierra Nevada are relatively intact compared to other areas of California. Regional vegetation has been historically affected by logging, fire suppression, rangeland clearing, grazing, mining, draining, damming, diversions, and the introduction of non-native species. Portions of the Merced River and South Fork corridors within Yosemite National Park are relatively natural, especially in wilderness areas where use has had little effect on vegetation. Development and use of infrastructure within Yosemite Valley and throughout the Sierra Nevada have caused local, long-term, adverse alterations to native vegetation patterns since the early days of Euro-American occupation in the 19th century.

In 1991, the U.S. Forest Service and the Bureau of Land Management developed a joint *South Fork and Merced Wild and Scenic River Implementation Plan* (1991b) for the segments of the South Fork and main stem of the Merced River that are under their jurisdiction. The plan is also a general management plan with many prescriptive goals and few specific actions. The plan endeavors to limit or end consumptive uses such as grazing within the river corridor and calls for the formalization of camping and launch facilities for nonmotorized watercraft. Implementation of these actions has had a beneficial effect by eliminating impacts where feasible (grazing does not currently occur within the river corridor), concentrating impacts in areas able to withstand visitor use, and providing facilities that mitigate adverse effects associated with visitor use (e.g., restrooms).

A number of recently implemented projects have begun to reverse the centuries-long pattern of native vegetation degradation caused by localized human uses in the region. These include:

- Merced River Ecological Restoration at Eagle Creek
- Happy Isles Fen Habitat Restoration

These projects are all anticipated to have local, long-term, moderate to major, beneficial effects on native vegetation because they involve the restoration of previously degraded areas and thus enhance local and regional native plant diversity. In addition to these specific projects, one of the major goals of the *Yosemite Valley Plan*, adopted by the National Park Service in December 2000, is to restore, protect, and enhance the natural resources of Yosemite Valley. Actions set forth in the plan that result in beneficial effects on vegetation include the removal of roads, facilities, and services in the Valley, as well as the relocation of employee housing out of the Valley and the establishment of vegetation restoration objectives (expressed as acres per habitat type).

Other past projects that have likely had a beneficial, cumulative effect on regional vegetation include transportation-related projects, which have the general goals of increasing transportation options and reducing reliance on automobiles in the area. In addition, the *Fire Management Plan* seeks to improve ecosystem health and meadows and therefore would have a regional, long-term, moderate to major, beneficial effect on Yosemite's vegetation resources and the biological ORVs throughout the Merced River corridor.

Present Actions. Present actions occurring in the region have the potential to result in both beneficial and adverse effects on vegetation resources, including:

- The Cook's Meadow Ecological Restoration is anticipated to have a local, long-term, moderate to major, beneficial effect on native vegetation because it involves the restoration of previously degraded areas and thus enhances local and regional native plant diversity.
- Additional current projects with net long-term, minor to moderate, beneficial effects on vegetation resources include the Happy Isles Dam Removal, Lower Yosemite Fall Project, Parkwide Invasive Plant Management Plan, Utilities Master Plan/East Yosemite Valley Utilities Improvement Plan, and Yosemite Valley Shuttle Bus Procurement.
- Projects such as the Curry Village Employee Housing, Happy Isles to Vernal Fall Trail Reconstruction, and the Yosemite Motels Expansion could have short- and long-term, adverse effects on vegetation resources through construction-related, operational, and maintenance actions.
- The South Fork Bridge Replacement could have both adverse and beneficial effects on vegetation.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into three general categories: (1) projects anticipated to have a net beneficial effect; (2) projects anticipated to have both beneficial and adverse effects; and (3) projects anticipated to have a net adverse effect.

Examples of projects that could have a beneficial cumulative effect on regional vegetation include:

- Red Peak Pass Trail Rehabilitation
- Wawona Campground Rehabilitation
- Update to the *Yosemite Wilderness Management Plan*
- Visitor Use and Floodplain Restoration Program
- El Portal Old Wastewater Treatment Facility Removal

Reasonably foreseeable future actions that could have mixed adverse and beneficial effects on regional vegetation include:

- Tuolumne Meadows Concept Plan
- Tuolumne Wild and Scenic River Comprehensive Management Plan
- Curry Village and East Yosemite Valley Campgrounds Improvements
- El Portal Concept Plan
- Yosemite Lodge Area Redevelopment

Cumulative effects of these projects could be mixed, combining both adverse and beneficial effects. The net beneficial or adverse effects of these projects are difficult to predict. For example, implementation of the El Portal Concept Plan could adversely affect vegetation resources during construction (short term) and permanently displace vegetation resources in El Portal due to construction of new employee housing (long term); however, removing and relocating employee housing and administrative facilities from Yosemite Valley to El Portal (long-term, beneficial effect) would reduce the intensity of these impacts and provide restoration opportunities in the Valley. Adverse impacts associated with the El Portal Concept Plan could be mitigated to a lesser intensity through project design (the design would need to protect and enhance the ORVs of the Merced River), implementation of Best Management Practices, compliance monitoring, and restoration.

Reasonably foreseeable future actions that could have local, adverse effects on vegetation include:

- El Portal Road Improvements Project (Segment D)
- Environmental Education Campus Development Program
- Indian Cultural Center
- Northside-Southside Drive Repaving
- Out-of-Valley Campground Plan
- Yosemite Village Interim Parking Improvements

Cumulative parkwide adverse effects would be primarily related to increased facilities and possible increases in visitor use and access. Each of these projects could have local, minor to major, adverse effects on vegetation resources during construction (short term) and through direct displacement of resources and effects of human use (long term). Examples of construction- and human-use-related effects on vegetation patterns include direct displacement of vegetation, introduction of non-native species that invade into adjacent natural areas and displace native species, fragmentation of habitats that prevents genetic mixing, alteration of natural patterns, and increased erosion and sedimentation.

Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on vegetation and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 1, could have a net local, long-term, negligible, beneficial effect on parkwide vegetation and the biological ORVs of the Merced River corridor.

Impairment

Alternative 1 would have a local, long-term, minor to moderate, adverse effect on parkwide vegetation as well as the biological ORVs of the Merced River corridor and therefore would not impair vegetation resources for future generations.

Wildlife

Analysis

Impacts to wildlife in the park can generally be classified into three main categories (Knight and Cole 1991): (1) habitat modification and fragmentation by disturbing vegetation and soil and changing microclimates (e.g., trampling habitat); (2) changing foraging or feeding ecology (e.g., discarding food or deliberately feeding animals); and (3) disturbance, whether intentional (harassment) or unintentional (e.g., wildlife observation, hiking across an animal's territory). Biological ORVs common to the entire Merced River (main stem and South Fork) include riverine wildlife habitats, such as riparian forests, meadows, and the aquatic environment of the river.

The following discussion provides an overview of the types of impacts to wildlife resources that could occur within each segment of the Merced River corridor from application of management elements of the Merced River Plan (e.g., boundaries, classifications, ORVs, management zones, the River Protection Overlay, and the Section 7 determination process) and other user capacity programs. In the short term under Alternative 1, overall visitor numbers are expected to remain relatively similar to existing levels. In the long term, however, overall visitor numbers would likely increase with the projected increase in visitor demand, resulting in adverse effects to wildlife and the biological ORVs. Visitation increases would not affect the vast majority of the Wild segments of the river because the Wilderness Trailhead Quota System would remain in place.

Impacts in Wilderness. Wildlife habitats within the upper Merced River are generally intact. Meadows within the Wilderness segments of the Merced River occur at Merced and Washburn Lakes, Echo Valley, at isolated locations along the Merced River, and at small alpine lakes. Coniferous forest habitats along the upper Merced River are structurally diverse and support a full community of associated wildlife species, except in the vicinity of campsites or other visitor areas, which occur in a very small percentage of the river corridor. Wilderness segments of the South Fork include a nearly full range of riverine environments typical to the Sierra Nevada that are largely intact and undisturbed by humans. Biological ORVs of the Wilderness segments include riverine wildlife habitats such as riparian forests, meadows, and the aquatic environment of the river.

Under Alternative 1, continued implementation of the park's existing user capacity management program could have short-term, negligible, beneficial impacts on wildlife and the biological ORVs in wilderness areas of the upper Merced River by reducing visitor effects on these sensitive resources. For example, trailhead quotas limit overnight entries into wilderness areas of the park. Existing trailhead quotas based on resource protection goals also restrict the number of day users on both established trails and cross-country routes in wilderness areas to prevent degradation of high-elevation meadows and impacts to associated wildlife species. Visitor numbers are expected to increase, but trailhead quotas would ensure no increase in overnight wilderness use. However, Alternative 1 provides a means for monitoring adverse effects on wildlife resources and the biological ORVs through WIMS, which implements management actions (e.g., restoring campsites and trails, limiting wilderness permits, or closing trails) to reduce visitor-use impacts on these resources.

Under Alternative 1, wilderness areas would maintain wilderness zoning (1A, 1B, 1C, and 1D) and would continue to reflect current management practices, based on the Wilderness Act and federal and Yosemite National Park wilderness policies and guidelines. Management zoning and the River Protection Overlay severely limit the types of facilities that could be built or rebuilt (e.g., large campsites with facilities are prohibited in zone 1B). All future actions (e.g., trail rehabilitation) would be subject to the consistent set of criteria and considerations (including the Section 7 determination process) from the Merced River Plan, which would guide how the actions could be implemented. Therefore, the application of management zoning and other Merced River Plan elements would have a local, short- and long-term, negligible, beneficial effect on wildlife and the biological ORVs in the Wilderness segments.

Under Alternative 1, impacts to wildlife and the biological ORVs would be concentrated in the few wilderness areas of high visitor use (e.g., Little Yosemite Valley Backpackers Campground and along major trail routes). The majority of the Wilderness segments of the planning corridor are intact and not affected by visitor use.

In addition, Alternative 1 includes a monitoring system to provide feedback on resource conditions. Management actions to reduce trailhead use in areas where visitor use is adversely affecting wildlife resources and the biological ORVs. Overall, the use of management zoning and other Merced River Plan elements, together with the trailhead quota and monitoring system, would protect and enhance native wildlife and the biological ORVs in Wilderness segments.

Impacts in Yosemite Valley. Riparian areas and low-elevation meadows are the most productive communities in Yosemite Valley. The high quality and large extent of riparian, wetland, and other riverine areas provide rich habitat for river-related species, neotropical migrant songbirds, and bat species. These habitats and associated species are examples of biological ORVs in Yosemite Valley.

Under Alternative 1, the Merced River Plan's management zoning, River Protection Overlay and other elements would further the protection of native wildlife. The existing pattern of development in Yosemite Valley was established long before the river's designation as Wild and Scenic. Although portions of the east Valley would remain developed and subject to facility and visitor-use effects, the existing Restricted Access Plan would continue to be implemented when visitor levels exceed the capacity of the park transportation infrastructure. Park management could also close areas that show unacceptable impacts to allow for restoration of wildlife habitat or to reduce the intensity of the adverse effects. Current zoning and the River Protection Overlay preclude several types of new development (e.g., new campsites are not allowed in the Day Use zone at Cathedral Beach) that could otherwise adversely affect native wildlife. All future actions (e.g., bridge removal, construction of new campsites) would be subject to the Merced River Plan's set of criteria and considerations which require the protection of ORVs. The application of existing facility-based user capacity management tools, management zoning, and the Merced River Plan's criteria and considerations would have a local, long-term, minor, beneficial effect on native wildlife and the biological ORVs.

In the long term, visitor numbers are expected to increase, resulting in local, minor to moderate, adverse effects on wildlife resources (e.g., habitat disturbance due to trampling, erosion, and social trails; human disturbance to wildlife; and human/wildlife conflicts). This effect is expected to be minor in areas of lower visitor use such as the west Valley. However, this effect is expected to be moderate in areas of high day-visitor use such as the east Valley, and specifically the Yosemite Lodge area. Although Alternative 1 provides measures to reduce user capacity (e.g., restricting access to the east Valley and area closures), this alternative does not provide a systematic VERP program to assess the effects of visitor use on wildlife resources and the biological ORVs.

This alternative would not substantially affect wildlife resources in areas of the Valley with low visitor use. However, local, short- and long-term, adverse effects to native wildlife would continue to occur in areas of intense visitor use as a result of Alternative 1 and the lack of a VERP monitoring and management program to prevent increased visitor-use effects. Overall, Alternative 1 would result in a net local, long-term, minor to moderate, adverse effect.

Impacts in the Gorge. Montane hardwood conifer is the dominant habitat type adjacent to riparian areas below Yosemite Valley. This type is broadly transitional between upper-elevation forest types and chaparral and is thus the most important type for migratory wildlife and their associated predators. Biological ORVs of the Gorge segment include river-associated wildlife species and diverse riparian areas that are largely undisturbed by humans.

The majority of the Gorge segment is zoned 2A+, 2B, 2C, and 2D. With the exception of the Cascades area, the Gorge segment would continue to be relatively inaccessible and visitor use is unlikely to increase substantially. Gorge zoning precludes most types of new development (e.g., campgrounds and lodging, new roads) that have the potential to adversely affect wildlife. In addition, future actions that could occur under the current zoning would be subject to the Merced River Plan's consistent set of criteria and considerations which require the protection of ORVs, as well as existing park management policies, which guide how the actions could be implemented.

In the Cascades area and the few other accessible areas of the gorge segment, visitor numbers under Alternative 1 are expected to increase, resulting in moderate, adverse effects on wildlife in these areas. Increased use of El Portal Road by visitors traveling to the Valley could also affect wildlife in the Gorge segment through noise, traffic, and other human disturbance. Alternative 1 does not provide a systematic VERP program to assess the effects of visitor use on wildlife resources and the biological ORVs.

Overall, the application of zoning and the Merced River Plan's consistent set of criteria and considerations within the Gorge segment in combination with the lack of a monitoring program to prevent increased visitor-use effects would have a local, long-term, minor, adverse effect on native wildlife and the biological ORVs in accessible portions of the Gorge segment.

Impacts in El Portal. Montane hardwood conifer is the dominant habitat type adjacent to riparian areas below Yosemite Valley. This type is broadly transitional between upper-elevation forest types and chaparral and is thus the most important type for migratory wildlife and their associated predators. In El Portal, wildlife access among habitats has been affected for many decades on the north side of the river by roads, residences, lodging, and other human activities and development. In contrast, habitats on the south side of the river are relatively pristine and free of human-built barriers, although some historic mining operations occurred in this area. The quality of these north-facing habitats is recognized as an ORV in the El Portal area. El Portal has a base zone of 2C, with large tracts zoned 3C. The El Portal segment of the river corridor includes the 100-year floodplain or River Protection Overlay, whichever is greater, as adopted in the Merced River Plan.

Examples of how management zoning, the River Protection Overlay, and the criteria and considerations under the Merced River Plan would affect native wildlife and the biological ORVs of El Portal are described below.

- The Sand Pit in El Portal was once used to mine sand from the Merced River. Under its 2C zoning, the Sand Pit could be restored, which would allow natural processes to prevail at this location, enhance the aquatic habitat, and allow natural revegetation with riparian species. Additional portions of the El Portal corridor are zoned 2C, preventing intensive development in areas adjacent to the river that support sensitive wildlife habitats. The 2C zoning of the

Sand Pit and other 2C areas could result in a local, moderate, beneficial effect on the biologic ORV.

- Portions of the El Portal corridor are zoned 3C (e.g., the Trailer Village, Old El Portal), which could allow additional development or redevelopment (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Potential development could have both short-term (e.g., construction-related) and long-term (e.g., night lighting, human presence, fire suppression in the vicinity of structures), minor to major, adverse effects on native wildlife. Although the application of mitigation measures described in Appendix B, would reduce impacts, long-term, minor to moderate, adverse effects on native wildlife (e.g., conversion of upland woodland or scrub vegetation to developed facilities) would remain in these areas.

The application of management zoning, the River Protection Overlay, and the criteria and considerations under the Merced River Plan would help to protect and enhance wildlife and the biological ORVs in the river corridor in El Portal. The zoning in El Portal allows for road repair as well as additional development of park administration facilities, which could have short- and long-term, adverse effects on native wildlife. The management elements and criteria and considerations (including the Section 7 determination process) would help protect the biological ORVs both within and outside the boundary.

In the long term, visitor numbers may increase in close proximity to the river, resulting in minor, adverse effects on wildlife resources in areas of moderate day-visitor use such as El Portal. Alternative 1 does not provide a systematic monitoring program with indicators of adverse user capacity effects on wildlife resources and the biological ORVs.

Although Alternative 1 includes the use of existing user capacity management tools, management zoning, and the criteria and considerations of the Merced River Plan, the existing narrow boundary and the lack of the VERP program would result in local, long-term, minor to moderate, adverse effects on native wildlife and the biological ORVs in the accessible and developed portions of El Portal segment.

Impacts in Wawona. Habitats along the South Fork—meadow, riparian, scrub and chaparral, and coniferous and deciduous forests—comprise nearly a full range of wildlife habitats that are intact and undisturbed by humans. The meadow and wetland communities of Wawona are currently designated as biological ORVs.

The Wawona segments include limited developed areas such as the Wawona Golf Course and Wawona Picnic Area (zoned 2C), Wawona Campground (zoned 3A), Wawona Hotel (zoned 3B), and the Wawona maintenance facility (zoned 3C). These areas were developed long before the river's designation as Wild and Scenic. Adverse effects to wildlife associated with developed areas include habitat fragmentation due to buildings, roads, and other development, vehicle and pedestrian noise, human presence, increased human/wildlife conflicts, and other visitor-use effects. These adverse effects are ongoing, local, and minor to moderate. However, the base zones within the South Fork in Wawona (1A, 2A, and 2B) preclude new development such as interpretive centers, food services, campgrounds and lodging, and day-visitor parking. Overall, this zoning results in a long-term, negligible, beneficial impact to wildlife and the biological ORVs.

Facilities within the River Protection Overlay, such as portions of Wawona Campground and a portion of the Wawona maintenance facility, are inconsistent with the River Protection Overlay and could be removed or relocated. Such removal or relocation of facilities could increase opportunities for natural revegetation and restoration of riparian habitat, resulting in a local, long-term, minor, beneficial impact on streamside vegetation, a biological ORV. Local, short-term, negligible to minor, adverse effects to wildlife could occur during any removal of facilities from the River Protection Overlay. These adverse impacts would be reduced to a negligible intensity by application of mitigation measures described in Appendix B. Limits on facilities through management zoning and the River Protection Overlay in combination with the Merced River Plan's criteria and considerations would allow existing natural areas to remain relatively intact and would direct restoration and enhancement of degraded native habitats.

In the long-term, visitor numbers are expected to increase, resulting in moderate, adverse effects on wildlife resources in the limited areas experiencing high visitor use in the Wawona segments. Alternative 1 does not provide a systematic VERP program to monitor the effects of visitor use on wildlife resources and the biological ORVs.

Overall, to the increase in park use under Alternative 1 and the lack of a VERP program to assess the effects of visitor-use would have a local, long-term, minor to moderate, adverse impact on native wildlife and the biological ORVs in those parts of the Wawona segments most used by visitors.

Summary of Alternative 1 Impacts. Compliance with existing park policies would help ensure that the biological ORVs related to wildlife are protected and enhanced. Under Alternative 1, management zoning and the River Protection Overlay would continue to preclude various types of new development that have the potential to affect native wildlife (a minor, beneficial impact). In the long term, the combination of existing facility-based user capacity management tools, management zoning, the River Protection Overlay, and application of a consistent set of decision-making criteria and considerations (including the Section 7 determination process) would have a negligible, beneficial effect on wildlife and the biological ORVs within the river corridor. These elements would preclude inappropriate development, encourage the removal of inappropriate facilities from the immediate river corridor, subject new actions to a rigorous planning process designed to eliminate adverse effects on the ORVs, and manage zones to their desired conditions. This would allow existing natural areas to remain relatively intact and would direct restoration and enhancement of degraded native habitats.

Local, short- and long-term, adverse effects on native wildlife could occur as the result of future actions that could be implemented under the proposed zoning (e.g., new campsites, parking facilities, road repair).

However, because Alternative 1 does not include a systematic monitoring program in non-Wilderness segments to prevent increased visitor-use effects on wildlife resources and the biological ORVs, this alternative could result in adverse effects on wildlife resources. Under Alternative 1, four basic adverse impacts would continue to occur and are expected to worsen over time in localized areas of moderate and high visitor use in the non-Wilderness segments of the corridor: degradation in habitat quality for riparian and wet-meadow-dependent wildlife; loss of habitat connectivity and increased habitat fragmentation; increased human-related disturbance; and continued stress on wildlife through factors such as the increasing presence of non-native species and disturbance-tolerant wildlife.

Overall, Alternative 1 would result in a local, long-term, minor to moderate, adverse impact on native wildlife and the biological ORVs within the river corridor.

Cumulative Impacts

Cumulative effects to wildlife are based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with potential effects of this alternative. The impact intensity would depend on whether the effects are expected to interact cumulatively. The projects identified below include those projects that have the potential to affect local wildlife patterns (i.e., within the river corridor) as well as large-scale or regional wildlife patterns.

Past Actions. Wildlife communities have been manipulated almost since the establishment of the park. Regional wildlife has been historically affected by logging, fire suppression, rangeland clearing, grazing, mining, draining, damming, diversions, and the introduction of non-native species. Fur-bearing mammals were trapped by park rangers until 1925; lions were considered dangerous predators and controlled through the 1920s; bears were artificially fed as a tourist attraction until 1940. Natural wildfires, with their generally beneficial effects on wildlife habitat, were routinely suppressed until 1972 (Wuerthner 1994). Past and ongoing activities include recreational use as well as the construction of dams, diversion walls, bridges, roads, pipelines, riprap, buildings, campgrounds, and other recreational features.

Yosemite's largest mammal, the grizzly bear, was extirpated from the region and from the state in the 1920s. Other mammal species that survive but are extremely rare are the fisher, wolverine (possibly extinct), and Sierra Nevada red fox. Several bird species have probably been reduced in Yosemite Valley by human activity, but are present in less disturbed areas of the park. Willow flycatchers no longer nest in Yosemite Valley—probably due as much to parasitism by brown-headed cowbirds as to destruction of riparian and meadow habitat. On a wider scale, apparent population declines have been detected in numerous other bird species in the Sierra Nevada, including Yosemite National Park. Possible causes for these declines include grazing, logging, fire suppression, development, recreational use, pesticides, habitat destruction on wintering grounds, and large-scale climate changes.

Amphibians in Yosemite National Park have suffered population declines similar to those seen in the rest of the Sierra Nevada (Drost and Fellers 1996). Red-legged frogs likely were found in Yosemite Valley in the past but are now are presumed extirpated. Significant factors in their disappearance probably include a reduction in perennial ponds and wetlands, and predation by bullfrogs. At higher elevations, mountain yellow-legged frogs and Yosemite toads are still present in a number of areas, but are severely reduced in population and range. Foothill yellow-legged frogs have disappeared completely from the park, if not the entire Sierra Nevada. Research continues to identify the causes of amphibian declines in the Sierra Nevada; possible causes include habitat destruction, non-native fish, pesticides, and diseases. Most fish currently found in the Merced River and its tributaries in Yosemite National Park have been introduced. Prior to trout stocking for sport fishing, native fish in Yosemite were probably limited to the rainbow trout and the Sacramento sucker, both of which were present only in the lower portions of the Merced River (i.e., Yosemite Valley and below). Rainbow trout introduced through stocking from other waters and fish hatcheries have now hybridized with, and/or has displaced, the original strain.

In 1991, the U.S. Forest Service and the Bureau of Land Management developed a joint *South Fork and Merced Wild and Scenic River Implementation Plan* for the segments of the main stem and South Fork of the Merced River that are under their jurisdiction. The plan is also a general management plan with many prescriptive goals and few actions. The plan endeavors to limit or end consumptive uses such as grazing within the river corridor and calls for the formalization of camping and launch facilities for nonmotorized watercraft. Implementation of these actions has a beneficial effect by eliminating impacts where feasible (grazing does not currently occur within the river corridor), concentrating impacts in areas able to withstand visitor use, and providing facilities that mitigate adverse effects associated with visitor use (e.g., restrooms).

Recently implemented projects have begun to reverse the centuries-long pattern of native vegetation and wildlife habitat degradation due to localized human uses in the region. These include:

- Merced River Ecological Restoration at Eagle Creek
- Happy Isles Fen Habitat Restoration
- Cascades Diversion Dam Removal

These projects are expected to have local, long-term, moderate to major, beneficial effects on wildlife habitat because they involve the restoration of previously degraded areas and thus enhance local and regional wildlife diversity. In addition to these specific projects, one of the major goals of the *Yosemite Valley Plan* is to restore, protect, and enhance the natural resources of Yosemite Valley. Actions set forth in the plan that result in beneficial effects on wildlife include the removal of roads, facilities, and services in the Valley (including roads through Stoneman Meadow and the southern portion of Ahwahnee Meadow, most parking areas in the east Valley, and commercial trail rides in the Valley), as well as the relocation of employee housing out of the Valley and the establishment of vegetation restoration objectives (expressed as acres per habitat type). Another broader plan, the *Fire Management Plan*, seeks to improve ecosystem health and restore meadows and therefore would have a regional, long-term, moderate to major, beneficial effect on Yosemite's wetland resources and the biological ORVs throughout the Merced River corridor.

Present Actions. Present actions in the region have the potential to result in both beneficial and adverse effects on wildlife resources:

- Current projects with net long-term, beneficial effects on wildlife resources (resulting from revegetation and habitat restoration efforts, control of competing invasive species, and improved air quality) include the Cook's Meadow Ecological Restoration, Happy Isles Dam Removal, Lower Yosemite Fall Project, Parkwide Invasive Plant Management Plan, Utilities Master Plan/East Yosemite Valley Utilities Improvement Plan, and Yosemite Valley Shuttle Bus Procurement.
- Projects such as the Curry Village Employee Housing, Happy Isles to Vernal Fall Trail Reconstruction, and Yosemite Motels Expansion could have short- and long-term, adverse effects on wildlife resources through construction-related, operational, and maintenance actions.
- The South Fork Bridge Replacement could have mixed adverse and beneficial effects on wildlife resources.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into three general categories: (1) projects anticipated to have a net beneficial effect; (2) projects anticipated to have both beneficial and adverse effects; and (3) projects anticipated to have a net adverse effect.

Examples of projects that could have a cumulative, beneficial effect on wildlife resources include:

- Wawona Campground Rehabilitation

- Update to the *Yosemite Wilderness Management Plan*
- Red Peak Pass Trail Rehabilitation
- Visitor Use and Floodplain Restoration Program

Although each of these projects could have slight local, short-term, adverse effects (e.g., construction-related effects), the general goal of these projects is to increase coordinated resource management and to restore sensitive ecosystems. Therefore, these projects could have a long-term, beneficial cumulative impact to regional native wildlife. For example, the update to the *Yosemite Wilderness Management Plan* could result in additional restrictions on wilderness facilities and activities, reducing site-specific erosion and trampling and possibly stock use.

Reasonably foreseeable future actions that could have mixed adverse and beneficial effects on wildlife resources include:

- Tuolumne Meadows Concept Plan
- Tuolumne Wild and Scenic River Comprehensive Management Plan
- Curry Village and East Yosemite Valley Campgrounds Improvements
- El Portal Concept Plan
- Yosemite Lodge Area Redevelopment

Cumulative effects of these projects could be mixed, combining both adverse and beneficial effects. The net beneficial or adverse effects of these projects are difficult to predict. For example, implementation of the Yosemite Lodge Area Redevelopment project has the potential to adversely affect wildlife resources during construction (short term), as well as permanently displace wildlife and remove wildlife habitat with the relocation of Northside Drive (long term); however, removing Yosemite Lodge facilities from the River Protection Overlay and floodplain would allow for revegetation and restoration of wildlife habitat within the Merced River corridor (long-term, beneficial effect). Adverse impacts associated with construction activities could be partially mitigated through project design and implementation of Best Management Practices, compliance monitoring, and restoration.

Reasonably foreseeable future actions that could have an adverse effect on wildlife resources include:

- El Portal Road Improvements Project (Segment D)
- Environmental Education Campus Development Program
- Indian Cultural Center
- Northside-Southside Drive Repaving
- Out-of-Valley Campground Plan
- Yosemite Village Interim Parking Improvements

Cumulative parkwide adverse effects would be related to increased facilities, access, and regional population growth. Each of these projects could have local, minor to major, adverse effects on wildlife resources during construction (short term) and due to direct displacement of resources (long term). Construction- and human-use-related effects on wildlife resources include those resulting from heavy equipment and construction/demolition activities (e.g., soil compaction, dust, vegetation removal, noise, and the introduction and spread of non-native species), night lighting, human presence, human/wildlife conflicts, fire suppression in the vicinity of structures. These actions could result in direct losses of nests or burrows, and indirect effects through the disturbance of nesting birds.

Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on wildlife and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 1, could have a net local, long-term, minor, adverse effect on parkwide native wildlife and the biological ORVs of the Merced River corridor.

Impairment

Alternative 1 would have a local, long-term, minor to moderate, adverse effect on parkwide native wildlife as well as the biological ORVs of the Merced River corridor and therefore has the potential to impair wildlife resources for future generations.

Rare, Threatened, and Endangered Species

Analysis

Due to the programmatic and prescriptive nature of the Merced River Plan, it is not possible to quantify discrete impacts to individual species. The conclusions herein provide programmatic information about rare, threatened, or endangered (sometimes referred to as “special-status”) plants and animals.

Species present in low numbers or that are of limited distribution are the most sensitive to impacts. Species that are less rare but more vulnerable to the types of actions that might take place (as a result of management decisions under the Merced River Plan) serve as important measures of adverse impacts to park ecosystems. Species that are members of both groups are considered to be vulnerable at a programmatic level (i.e., as a result of even broad management decisions implicit in this Revised Merced River Plan) and are discussed below as examples of possible effects.

River-related rare, threatened, and endangered species are components of the biological ORV. Therefore, the magnitude of any adverse or beneficial effect to river-related special-status species has been evaluated for the corresponding effect on the biological ORV. The following discussion provides an overview of the types of impacts to special-status species that could occur within each segment of the Merced River corridor from application of Merced River Plan management elements (e.g., boundaries, classifications, ORVs, management zones, the River Protection Overlay, and the Section 7 determination process for the Merced River corridor) and existing user capacity measures. In the short term under Alternative 1, visitor numbers are expected to remain similar to existing levels. In the long term, however, visitor numbers would likely increase, resulting in adverse effects to special-status species and the biological ORVs.

Impacts in Wilderness. Habitats within the upper Merced River are generally intact, except in the few areas where visitor use is intense (e.g., in the vicinity of the Little Yosemite Valley Backpackers Campground, Moraine Dome Backpackers Campground, Merced Lake High Sierra Camp, and Backpackers Campground, and along major trail routes). All of these facilities pre-date the river’s designation as Wild and Scenic. The Wilderness segment of the South Fork includes a nearly full range of riverine environments typical to the Sierra Nevada that are largely intact and undisturbed by humans. No facilities (other than a few trails) occur in the upper and lower portions of the South Fork, access is difficult, and visitor and stock use is low. Rare, threatened, and endangered species of plants and wildlife reported in the South Fork generally occur in wilderness portions of the corridor or in relatively inaccessible habitats. Biological ORVs of the Wilderness segments of the Merced River include riverine habitats such as riparian forests, meadows, and the aquatic environment of the river, and associated special-status species such as Yosemite toad and mountain yellow-legged frog.

The following examples describe general actions and related adverse effects of visitor use that would continue to occur in the vicinity of facilities and areas of concentrated use in the upper main stem of the Merced River. These effects are generally considered long term and adverse. In areas of the wilderness reaches of the South Fork of the Merced River, continued use of existing facilities (e.g., trails) at a similar level of intensity would not adversely affect rare, threatened, and endangered species.

- Trampling, grazing, or camping within meadows could have direct effects on rare plants, such as the Mono Hot Springs evening primrose, and habitat for ground dwelling special-status wildlife species, including Sierra Nevada mountain beaver.
- Trampling and grazing of meadows could reduce habitat for voles, therefore reducing the prey base for great gray owls.
- Stock use would continue to support the local abundance of brown-headed cowbirds (a nest parasite) to the detriment of species such as willow flycatcher and yellow warblers.
- Continued rock climbing could adversely affect crevice-roosting special-status species of bats, such as greater western mastiff bat.
- Continued concentrated visitor use along the north side of the Merced River within Little Yosemite Valley could have site-specific, adverse effects on forest communities located north of the river and could have long-term, adverse effects on habitat for northern goshawk and Cooper's hawk at this location, as repeated disturbances near nest trees could result in nest failure or abandonment.

The degree to which rare, threatened, and endangered species would be affected depends on individual species habitat requirements, position relative to facilities and use, and sensitivity to perturbation. Special-status species that occur near Merced Lake High Sierra Camp and Backpackers Campground, Little Yosemite Valley Backpackers Campground, Moraine Dome Backpackers Campground, and major trail routes could experience adverse effects.

Under Alternative 1, implementation of the park's existing user capacity management program could have short-term, negligible, beneficial impacts on rare, threatened, and endangered species and the biological ORVs in Wilderness segments of the Merced River by reducing visitor effects on these sensitive resources. For example, trailhead quotas limit total overnight entries into wilderness areas of the park to 1,280 per day. Existing quotas based on resource protection goals also restrict the number of day users on both established trails and cross-country routes in wilderness areas to prevent degradation of high-elevation meadows and impacts to associated rare, threatened, and endangered species. However, visitor numbers are expected to increase, and Alternative 1 does not provide a means for monitoring adverse effects on special-status species and the biological ORVs or for implementing management actions (e.g., reducing trailhead quotas, limiting wilderness permits, or closing trails) to reduce adverse visitor-use impacts on these resources.

Under Alternative 1, wilderness areas would maintain wilderness zoning (1A, 1B, 1C, and 1D) and would continue to reflect current management practices and visitor use levels, based on the Wilderness Act, the Wilderness trailhead quota system, and the Merced River Plan. Management zoning and the River Protection Overlay limit the types of new facilities that could be built (e.g., large campsites with facilities are prohibited in zone 1B zone) potentially beneficially affecting special-status species. Future actions (e.g., trail rehabilitation) that could occur under the current zoning would be subject to the Merced River Plan's consistent set of criteria and considerations which require the protection of ORVs. The plans and policies would result in local, short- and long-term, negligible, beneficial effects on special-status species and the biological ORVs in the Wilderness segments.

A Wilderness Impacts Monitoring System (WIMS) began in the 1970s. Under WIMS, the park conducts wilderness-wide inventory and monitoring studies focused on campsite and trail impacts. The results of WIMS provides park management with a mechanism to monitor potential impacts to the river corridor through wilderness, and take corrective actions as appropriate to ensure that the river's ORVs are being protected and enhanced in these segments.

Overall, the application of management zoning and the other Merced River Plan elements, in combination with the trailhead quota system and WIMS would have a negligible effect on special-status species and the biological ORVs in the Wilderness segments.

Impacts in Yosemite Valley. Riparian areas and low-elevation meadows are the most productive communities in Yosemite Valley. The high quality and large extent of riparian, wetland, and other riverine areas provide rich habitat for river-related species, including special-status species, neotropical migrant songbirds, and bat species. These habitats and associated species are examples of biological ORVs in Yosemite Valley. Existing facilities and ongoing stock and visitor use would result in the contribution of adverse affects on these habitats and rare, threatened, and endangered species in the following ways:

- Trampling of meadows (e.g., at the base of El Capitan) could have direct effects on rare plants, as well as habitat for ground-dwelling wildlife species (e.g., voles), therefore reducing the prey base for special-status raptors and owls.
- Continued high visitor use and the presence of the stable in Yosemite Valley would promote brown-headed cowbirds to the detriment of species such as yellow warbler.
- Riparian-dependent species (e.g., yellow warbler) would continue to be adversely affected by the overall amount of noise, traffic, and human presence at facilities such as North and Lower Pines Campgrounds and Camp 6.
- Continued expansion of coniferous forests throughout Yosemite Valley could adversely affect wildlife species such as great-horned owl and yellow warbler and plant species such as sugar stick, boreal bedstraw, false pimpernel, azure penstemon, and ladies' tresses that depend on meadow and oak woodland habitats.
- Introduced trout would continue to affect native rainbow trout strains. Bullfrogs would continue to affect special-status amphibians and could affect reintroduction efforts (e.g., for California red-legged frog).
- Continued non-native predation, fragmentation of aquatic and floodplain habitats, use of nonmotorized watercraft, swimming, and fishing could adversely affect northwestern pond turtle.

- Increased human presence and human-related effects associated with the use of facilities (e.g., night lighting, reduction of habitat, noise, erosion) would likely result in long-term, adverse effects on special-status bats, hawks, owls, and numerous other bird species in Yosemite Valley.
- Alternative 1 could affect the success of reintroduction or recolonization efforts for such species as willow flycatcher and California red-legged frog, now extirpated from Yosemite Valley.

Under Alternative 1, Merced River Plan's management zoning, River Protection Overlay and other elements would further the protection of sensitive species. The existing pattern of development in Yosemite Valley was established long before the river's designation of Wild and Scenic. Although portions of the east Valley would remain developed and subject to facility and visitor-use effects, the existing Restricted Access Plan would continue to be implemented when visitor levels exceed the capacity of the park transportation infrastructure. Park management could also close areas that show unacceptable impacts to allow for restoration or to reduce the intensity of the adverse effects. In addition, current zoning and the River Protection Overlay preclude several types of new development (e.g., new campsites are not allowed in the Day Use zone at Cathedral Beach) that have the potential to adversely affect rare, threatened, and endangered species. Future actions that could occur under current zoning (e.g., bridge removal, construction of new campsites) would be subject to the Merced River Plan's consistent set of criteria and considerations which include the protection of ORVs. The application of existing facility-based user capacity management tools, management zoning, and the Merced River Plan's criteria and considerations in Yosemite Valley would have a local, long-term, minor, beneficial effect on rare, threatened, and endangered species and the biological ORVs.

In the long term, visitor numbers are expected to increase, resulting in adverse effects on special-status species (e.g., night lighting, reduction of habitat, noise, erosion). These effects are expected to be moderate in areas of high visitor use such as east Yosemite Valley and minor in lower use areas such as the western portion of Yosemite Valley. Alternative 1 does not provide a means for monitoring adverse effects on special-status species and the biological ORVs or for implementing management actions to reduce visitor-use impacts on these resources.

Although Alternative 1 does include some mechanisms for protecting special-status species and the biological ORVs in Yosemite Valley, local, short- and long-term, adverse effects to special-status species could occur as the result of increases in visitation and the lack of a monitoring and management program to prevent increased visitor-use effects. These local, long-term, adverse effects would be minor to moderate.

Impacts in the Gorge. ORVs of the Gorge segment include river-associated special-status species and diverse riparian areas that are largely undisturbed by humans. The majority of the Gorge segment is zoned 2A+, 2A, 2B, and 2D. With the exception of the Cascades area, the Gorge segment would continue to be relatively inaccessible, and visitor use is unlikely to increase. Gorge zoning precludes most types of new development (e.g., campgrounds and lodging, new roads) that have the potential to adversely affect rare, threatened, and endangered species. In addition, future actions that could occur under the current zoning would be subject to the Merced River Plan's consistent set of criteria and considerations, which require the protection of ORVs. Other existing user capacity policies and guidelines would also be used.

In the long term, visitor numbers under Alternative 1 are expected to increase, resulting in moderate, adverse effects on special-status species in areas of moderate visitor use such as the Cascades area. Alternative 1 does not provide a means for monitoring adverse effects on special-status species and the biological ORVs or for implementing follow-on management actions to reduce visitor-use impacts on these resources.

Overall, the application of zoning and the Merced River Plan's consistent set of criteria and considerations within the Gorge segment in combination with the lack of a monitoring and management program to prevent increased visitor-use effects would have a local, long-term, minor, adverse effect on special-status species and the biological ORVs in accessible portions of the Gorge segment.

Impacts in El Portal. Montane hardwood conifer is the dominant habitat type adjacent to riparian areas below Yosemite Valley. In El Portal, wildlife access among habitats has been affected for decades on the north side of the river by roads, residences, lodging, and other human activities and development. In contrast, habitats on the south side of the river are relatively pristine and free of human-built barriers, although some historic mining operations have occurred in this area. The quality of these north-facing habitats is recognized as an ORV in the El Portal area, potentially providing nesting/roosting and foraging habitat for numerous special-status bird and bat species. El Portal has a base zone of 2C, with large tracts zoned 3C. The El Portal segment of the river corridor boundary includes the 100-year floodplain or River Protection Overlay, whichever is greater, as adopted in the Merced River Plan.

Examples of how management zoning, the River Protection Overlay, and the criteria and considerations under the Merced River Plan would affect rare, threatened, and endangered species and the biological ORVs in El Portal are described below.

- The Sand Pit in El Portal was once used to mine sand from the Merced River. Riparian vegetation, such as the host plant for the Valley elderberry longhorn beetle, as well as a recently identified population of Congdon's wooly sunflower exist at this site. Under its 2C zoning, the Sand Pit could be restored, which would allow natural processes to prevail at this location, enhance the aquatic habitat, and allow natural revegetation with riparian species, thus resulting in a local, moderate, beneficial effect on this ORV.
- Portions of El Portal are zoned 3C (e.g., the Trailer Village, Old El Portal), which could allow additional development (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Potential development could have both short-term (e.g., construction-related) and long-term (e.g., night lighting, human presence, fire suppression in the vicinity of structures), minor to major, adverse effects on rare, threatened, and endangered species. Although the application of mitigation measures described in Appendix B would reduce impacts, long-term, minor to moderate, adverse effects on rare, threatened, and endangered species (e.g., conversion of upland woodland or scrub vegetation to developed facilities) would remain in these areas.

The application of management zoning, the River Protection Overlay, and the criteria and considerations under the Merced River Plan would help to protect and enhance rare, threatened, and endangered species and the biological ORVs in El Portal. The zoning in El Portal allows for road repair as well as additional development of park administration facilities, which could have short- and long-term, adverse effects on rare, threatened, and endangered species. The management elements and criteria and considerations (including the Section 7 determination process) would protect rare, threatened, and endangered species and the biological ORVs both within and outside the boundary.

In the long term, visitor numbers are expected to increase, resulting in minor to moderate, adverse effects on special-status species in areas of moderate day-visitor use such as in close proximity to the river. Alternative 1 does not provide a means for monitoring adverse effects on special-status species and the biological ORVs or for implementing management actions to reduce visitor-use impacts on these resources.

Although Alternative 1 includes the use of existing user capacity management tools, management zoning, and the consistent set of Merced River Plan criteria and considerations, the lack of a VERP monitoring and management program to prevent increased visitor-use effects would have a local, short- and long-term, minor to moderate, adverse effect on rare, threatened, and endangered species and the biological ORVs in accessible and developed portions of this segment.

Impacts in Wawona. Habitats along the South Fork—meadow, riparian, scrub and chaparral, and coniferous and deciduous forests—comprise nearly a full range of habitats that are intact and undisturbed by humans. The meadow and wetland communities of Wawona and the fishery along the South Fork are currently designated as biological ORVs. River-related special-status species in the Wawona segments include Wawona riffle beetle and willow flycatcher, a species indicative of an intact meadow-riparian complex.

The Wawona segments include developed areas such as the Wawona Golf Course and Wawona Picnic Area (2C), Wawona Campground (3A), Wawona Hotel (3B), and the Wawona maintenance facility (3C). These areas were developed well before the river was designated Wild and Scenic. Adverse effects to rare, threatened, and endangered species associated with developed areas include habitat fragmentation due to buildings, roads, and other development, trampling, social trails, vehicle and pedestrian noise, human presence and disturbance, and other visitor-use effects. These adverse effects are local, long term, and minor to moderate. However, the base zones within the South Fork in Wawona (1B, 2A, and 2B) preclude new development such as interpretive centers, food services, campgrounds and lodging, and day-visitor parking. This zoning results in a long-term, negligible, beneficial impact to rare, threatened, and endangered species and the biological ORVs.

Facilities within the River Protection Overlay, such as portions of Wawona Campground and a portion of the Wawona maintenance facility, are inconsistent with the River Protection Overlay and could be removed or relocated. This could increase opportunities for natural revegetation and restoration of riparian habitat, resulting in a local, long-term, minor, beneficial impact on streamside vegetation and special-status species. Local, short-term, negligible to minor, adverse effects to special-status species could occur during removal of any facilities from the River Protection Overlay. These adverse impacts would be reduced to a negligible intensity by application of mitigation measures described in Appendix B. Limits on facilities (management zoning and the River Protection Overlay) in combination with the application of a consistent set of decision-making criteria and considerations from the Merced River Plan would allow existing natural areas to remain relatively intact and would direct restoration and enhancement of degraded native habitats.

In the long term, visitor numbers are expected to increase, resulting in moderate, adverse effects on special-status species in the limited areas of high day-visitor use in Wawona. Alternative 1 does not include a VERP program for monitoring adverse effects on special-status species and the biological ORVs or for implementing follow-on management actions.

Overall, to the increase in park use under Alternative 1 and the lack of a VERP monitoring and management program to assess the effects of visitor use would have a local, long-term, minor to moderate, adverse impact on rare, threatened, and endangered species and the biological ORVs in those parts of Wawona most used by visitors.

Summary of Alternative 1 Impacts. Compliance with existing park policies and federal regulations such as the Endangered Species Act help ensure that the biological ORVs in each river segment are protected and enhanced. Under Alternative 1, management zoning and the River Protection Overlay would preclude various types of new development that have the potential to affect rare, threatened, and endangered species. In the long term, the combination of existing facility-based user capacity management tools, management zoning, the River Protection Overlay, and application of a consistent set of decision-making criteria and considerations from the Merced River Plan would have a negligible, beneficial effect on rare, threatened, and endangered species and the biological ORVs within the river corridor. These elements could preclude inappropriate development, remove inappropriate facilities from the immediate river corridor, subject new actions to a rigorous planning process designed to eliminate adverse effects on the ORVs, and manage zones to their desired conditions. This would allow existing natural areas to remain relatively intact and would direct restoration and enhancement of degraded native habitats.

Local, short- and long-term, adverse effects on special-status species could occur as the result of future actions that could be implemented under the proposed zoning (e.g., new campsites, parking facilities, road repair). In addition, because Alternative 1 does not include a VERP monitoring and management program to prevent increased visitor-use effects on special-status species and the biological ORVs, this alternative could result in adverse effects on rare, threatened, and endangered species. Under Alternative 1, four basic adverse impacts would continue to occur and are expected to worsen over time: degradation in habitat quality for riparian and wet-meadow-dependent rare, threatened, and endangered species; loss of habitat connectivity and increased habitat fragmentation; increased human-related disturbance; and continued stress on rare, threatened, and endangered species through factors such as the increasing presence of non-native species and disturbance-tolerant wildlife.

Overall, Alternative 1 would result in a local, long-term, minor to moderate, adverse impact on rare, threatened, and endangered species and the biological ORVs within the river corridor.

Cumulative Impacts

Cumulative effects to rare, threatened, and endangered species are based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with potential effects of this alternative. The impact intensity would depend on whether the effects are expected to interact cumulatively. The projects identified below include those projects that have the potential to effect populations of rare, threatened, or endangered species (i.e., within the river corridor) as well as large-scale or regional populations of the same species.

Past Actions. Natural habitats have been manipulated almost since the establishment of the park. Regional wildlife and vegetation patterns have been historically affected by logging, fire suppression, rangeland clearing, grazing, mining, draining, damming, diversions, and the introduction of non-native species. Mammal species that survive but are extremely rare are the fisher, wolverine (possibly extinct), and Sierra Nevada red fox. Several bird species have probably been reduced in Yosemite Valley by visitor activity, but are present in less disturbed areas of the park. Willow flycatchers no longer nest in Yosemite Valley, probably due as much to parasitism by brown-headed cowbirds as to destruction of riparian and meadow habitat. Amphibians in Yosemite National Park have suffered population declines similar to those seen in the rest of the Sierra Nevada (Drost and Fellers 1996). Red-legged frogs likely were found in Yosemite Valley in the past but are now are presumed extirpated. Significant factors in their disappearance probably include reduction in perennial ponds and wetlands, and predation by bullfrogs. At higher elevations, mountain yellow-legged frogs and Yosemite toads are still present in a number of areas, but are severely reduced in population and range. Foothill yellow-legged frogs have disappeared completely from the park, if not the entire Sierra Nevada. Research continues to identify the causes of amphibian declines in the Sierra Nevada; possible causes include habitat destruction, non-native fish, pesticides, and diseases. Past and ongoing activities that affect rare, threatened, or endangered species include recreational use as well as the construction of dams, diversion walls, bridges, roads, pipelines, riprap, buildings, campgrounds, and other recreational features.

In 1991, the U.S. Forest Service and the Bureau of Land Management developed a joint *South Fork and Merced Wild and Scenic River Implementation Plan* for the segments of the main stem and South Fork of the Merced River that are under their jurisdiction. The plan is also a general management plan with many prescriptive goals and few actions. The plan endeavors to limit or end consumptive uses such as grazing within the river corridor and calls for the formalization of camping and launch facilities for nonmotorized watercraft. Implementation of these actions has a beneficial effect by eliminating impacts where feasible (grazing does not currently occur within the river corridor), concentrating impacts in areas able to withstand visitor use, and providing facilities that mitigate adverse effects associated with visitor use (e.g., restrooms).

Recently implemented projects have begun to reverse the centuries-long pattern of native vegetation and habitat degradation due to localized human uses in the region. These include:

- Merced River Ecological Restoration at Eagle Creek
- Happy Isles Fen Habitat Restoration
- Cascades Diversion Dam Removal

These projects are expected to have local, long-term, moderate to major, beneficial effects on habitat and rare, threatened, and endangered species because they involve the restoration of previously degraded areas and thus enhance local and regional plant and wildlife species diversity. In addition to these specific projects, one of the major goals of the *Yosemite Valley Plan* is to restore, protect, and enhance the natural resources of Yosemite Valley. Actions set forth in the plan that result in beneficial effects on rare, threatened, and endangered species include the removal of roads, facilities, and services in the Valley (including roads through Stoneman Meadow and the southern portion of Ahwahnee Meadow, most parking areas in the east Valley, and commercial trail rides in the Valley), as well as the relocation of employee housing out of the Valley and the establishment of vegetation restoration objectives (expressed as acres per habitat type).

Other past projects that have likely had a beneficial, cumulative effect on regional habitat and special-status species include transportation-related projects, which have the general goal of increasing transportation options and reducing reliance on automobiles. In addition, the *Fire Management Plan* seeks to improve ecosystem health and restore meadows and therefore would have a regional, long-term, moderate to major, beneficial effect on Yosemite's rare, threatened, and endangered species and the biological ORVs throughout the Merced River corridor.

Present Actions. Present actions in the region have the potential to result in both beneficial and adverse effects on rare, threatened, and endangered species:

- Current projects with net long-term, beneficial effects on rare, threatened, and endangered species (resulting from revegetation and habitat restoration efforts, control of competing invasive species, and improved air quality) include the Cook's Meadow Ecological Restoration, Happy Isles Dam Removal, Lower Yosemite Fall Project, Parkwide Invasive Plant Management Plan, Utilities Master Plan/East Yosemite Valley Utilities Improvement Plan, and Yosemite Valley Shuttle Bus Procurement.
- Projects such as the Curry Village Employee Housing, Happy Isles to Vernal Fall Trail Reconstruction, South Fork Bridge Replacement, and Yosemite Motels Expansion could have short- and long-term, adverse effects on rare, threatened, and endangered species through construction-related, operational, and maintenance actions.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into three general categories: (1) projects anticipated to have a net beneficial effect; (2) projects anticipated to have both beneficial and adverse effects; and (3) projects anticipated to have a net adverse effect.

Examples of projects that could have a cumulative, beneficial effect on rare, threatened, and endangered species include:

- Wawona Campground Rehabilitation
- Update to the *Yosemite Wilderness Management Plan*
- Red Peak Pass Trail Rehabilitation
- Visitor Use and Floodplain Restoration Program

Although each of these projects could have slight local and short-term, adverse effects (e.g., construction-related effects), the general goal of these projects is to increase coordinated resource management and to restore sensitive ecosystems. Therefore, these projects could have a long-term, beneficial cumulative impact to regional rare, threatened, and endangered species. For example, the update to the *Yosemite Wilderness Management Plan* could result in additional restrictions on wilderness facilities and activities, reducing site-specific erosion and trampling and possibly stock use.

Reasonably foreseeable future actions that could have mixed adverse and beneficial effects on rare, threatened, and endangered species include:

- Tuolumne Meadows Concept Plan
- Tuolumne Wild and Scenic River Comprehensive Management Plan
- Curry Village and East Yosemite Valley Campgrounds Improvements
- El Portal Concept Plan

- Yosemite Lodge Area Redevelopment

Cumulative effects of these projects could be mixed, combining both adverse and beneficial effects. The net beneficial or adverse effects of these projects are difficult to predict. For example, implementation of the Yosemite Lodge Area Redevelopment project has the potential to adversely affect rare, threatened, and endangered species during construction (short term), as well as permanently displace special-status species and habitat with the relocation of Northside Drive (long term); however, removing Yosemite Lodge facilities from the River Protection Overlay and floodplain would allow for revegetation and restoration of habitat within the Merced River corridor (long-term, beneficial effect). Adverse impacts associated with construction activities could be partially mitigated through project design and implementation of Best Management Practices, compliance monitoring, and restoration.

Reasonably foreseeable future actions that could have an adverse effect on rare, threatened, and endangered species include:

- Environmental Education Campus Development Program
- El Portal Road Improvements Project (Segment D)
- Indian Cultural Center
- Northside-Southside Drive Repaving
- Out-of-Valley Campground Plan
- Yosemite Village Interim Parking Improvements

Cumulative parkwide adverse effects would be related to increased facilities, access, and regional population growth. Each of these projects could have local, minor to major, adverse effects on rare, threatened, and endangered species during construction (short term) and due to direct displacement of resources (long term). Construction and human-use-related effects on rare, threatened, and endangered species include direct displacement of species, introduction of non-native species that invade into adjacent natural areas and displace native species, fragmentation of habitats that prevents genetic mixing, alteration of natural patterns, and increased erosion and sedimentation. Although each new development would be required to mitigate or compensate for adverse effects to rare, threatened, and endangered species, the mitigation would generally be uncoordinated and would not typically replace natural ecosystem functions or values that were present throughout the region prior to Euro-American settlement.

Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on rare, threatened, and endangered species and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 1 could have a net local, long-term, minor, adverse effect on parkwide rare, threatened, and endangered species and the biological ORVs of the Merced River corridor.

Impairment

Alternative 1 would have a local, long-term, minor to moderate, adverse effect on parkwide rare, threatened, and endangered species and the biological ORVs of the Merced River corridor and therefore has the potential to impair these resources for future generations.

Air Quality

Analysis

The following discussion provides an overview of the types of impacts to air quality that could occur within each segment of the Merced River corridor associated with Alternative 1. Alternative 1 includes application of the elements of the Merced River Plan (boundaries, classifications, ORVs, management zones and River Protection Overlay, and the Section 7 Determination process), and existing park management policies.

Under Alternative 1, air quality in the river corridor would continue to be influenced by local sources within the park and by regional sources upwind of the park. Local emissions sources include stationary, area, and mobile sources. Generally, the effects of local emissions sources would be limited to those areas (such as the Valley, the El Portal Administrative Site, and Wawona), where these sources are concentrated. Portions of the corridor that extend through wilderness areas would continue to be largely free of effects from local emissions sources (with the exception of prescribed fires) but would be subject to regionwide emissions trends.

Impacts in Wilderness. User capacity within wilderness areas of Yosemite National Park is currently addressed through the trailhead quota system and monitoring of wilderness resource conditions. Under Alternative 1, use of trails in wilderness areas would continue consistent with existing conditions. It is anticipated that annual day use of easily accessible wilderness areas (e.g., the trail to Half Dome) could increase with the projected increase in visitor demand. However, wilderness areas would continue to be largely free of effects from local emissions sources (with the exception of prescribed fires) but would be subject to regionwide emissions trends. Emissions from prescribed burning would continue to be controlled through implementation of smoke management policies in the 2004 *Fire Management Plan*; the current policies are intended to minimize impacts on air quality from prescribed burning within the park and region. The continuation of existing conditions would be expected to have local, long-term, negligible to minor, adverse impacts on air quality.

Impacts in Yosemite Valley. Under Alternative 1, air quality in Yosemite Valley would continue to be influenced by local sources within the park and by regional sources upwind of the park. The effects of local emissions sources are concentrated in the Valley. Emissions from local stationary sources, such as fossil-fuel–powered mechanical equipment, would continue to be regulated through applicable Mariposa County Air Pollution Control District *Rules and Regulations*.

Local area pollution sources would continue to include regular maintenance activities, campfires, woodstoves, fireplaces, prescribed fires, and vehicle entrainment of road dust. Some of these sources would continue in the same manner and extent as under existing conditions, while others would increase in relative proportion to visitor use levels. More specifically, in the short-term, visitor levels would remain approximately the same as existing levels. Over the long-term, visitor numbers could increase somewhat over time, but such increases would be constrained by existing facility levels.

Regular maintenance-related activities would result in temporary increases in emissions of particulate matter in the immediate vicinity of such activities. Campfires, woodstoves, and fireplaces would continue to be subject to park regulations, and related emissions would not be expected to increase because the number of campsites and housing (where campfires, woodstoves, and fireplaces are used) would remain much the same under this alternative as under existing conditions and because campsites and housing are already full most of the year. Campfire-, woodstove-, and fireplace-related emissions would continue to affect air quality and visibility within the Valley under certain meteorological conditions. Emissions from prescribed burning would continue to be controlled through implementation of smoke management policies in the 2004 *Fire Management Plan*, as discussed above. Emissions from vehicle entrainment of road dust would continue to affect air quality, particularly in winter and early spring when drying road surfaces expose sand deposited for traction to vehicle entrainment into the atmosphere. Over the long term, road dust would increase in rough proportion to the number of vehicle-miles traveled within the park.

Local mobile sources would continue to include automobiles, trucks, and buses and would remain subject to state and federal emissions control standards and programs, which are expected to lead to a continuing decrease in emissions per vehicle-mile-traveled for the foreseeable future due to continued motor vehicle fleet turnover, cleaner burning fuels, and improved combustion technologies. In the future, the number of vehicles in the Valley on typically busy days would essentially be the same as under existing conditions; however, on an average basis, the number of vehicles would increase in rough proportion to the number of annual visitors. In general, the downward trend in emissions of ozone precursors per vehicle and per vehicle-miles traveled would more than offset the long-term incremental increase in the number of annual vehicle trips within the Valley. Based on composite vehicle emissions factors derived from data published by the state Air Resources Board, the anticipated reduction in emissions per vehicle-mile would be approximately 85% for volatile organic compounds and 75% for nitrogen oxides between existing 2004 conditions and 2020. Because the increase in vehicle-miles traveled in the Valley would be less than 75% in 2020 relative to existing conditions, these reductions in emissions per vehicle-mile would offset any increases in emissions associated with increases in annual visitors. Volatile organic compounds and nitrogen oxides are precursor compounds associated with ozone formation. However, in contrast to the ozone precursors, most of the particulate matter associated with vehicle use is related to entrainment of road dust rather than to exhaust. Thus, as explained above, particulate emissions would be expected to increase over the long term in rough proportion to the number of vehicle-miles traveled within the Valley. With respect to ozone precursors, overall local emissions in Yosemite Valley under Alternative 1 would follow the regional downward trend relative to existing conditions (as a result of more efficient vehicle engines and continued vehicle fleet turn-over), which would represent a regional, long-term, minor, beneficial effect. With respect to particulate matter, overall local emissions in Yosemite Valley under Alternative 1 could increase relative to existing conditions, resulting in a local, long-term, minor, adverse effect.

Impacts in the Gorge. Under Alternative 1, areas zoned Untrailed (1A), Open Space and Undeveloped Open Space (2A, 2A+), and Discovery (2B) in the Gorge segment would continue to be free of effects from local emissions sources but would be subject to regionwide emissions trends. Emissions from prescribed burning would continue to be controlled through implementation of smoke management policies in the 2004 *Fire Management Plan*. In the short term, user levels would remain approximately the same as existing levels. Over the long term, user numbers could increase somewhat over time, but such increases would be constrained by existing facility levels. Areas zoned Day Use (2C), Attraction (2D), and Park Operations and Administration (3C) would continue to experience a local, long-term, minor, adverse effect due to the concentration of vehicular emissions in those areas.

Impacts in El Portal. Under Alternative 1, the boundary for the El Portal segment would remain the same as that shown in the 2000 Merced River Plan. This boundary does not account for precise locations of El Portal ORVs; however, air quality is not listed as an ORV along any of the river segments, including El Portal. Under Alternative 1, management zoning in the El Portal segment of the river corridor would be limited to Day Use (2C) and Park Operations and Administrative (3C) zoning. The base zone through much of this segment is Day Use (2C). In the short term, visitor levels would remain approximately the same as existing levels. Over the long term, visitor numbers could increase somewhat over time, but such increases would be constrained by existing facility levels. These areas would continue to experience a local, long-term, minor, adverse effect due to the concentration of vehicular emissions in those areas.

Impacts in Wawona. Under Alternative 1, air quality in Wawona would continue to be influenced by local sources within the park and by regional sources upwind of the park. The effects of local emissions sources are concentrated in Wawona. Emissions from local stationary sources, such as fossil-fuel–powered mechanical equipment, would continue to be regulated through applicable Mariposa County Air Pollution Control District *Rules and Regulations.*

Local area pollution sources would continue to include regular maintenance activities, campfires, woodstoves, fireplaces, prescribed fires, and vehicle entrainment of road dust. Some of these sources would continue in the same manner and extent as under existing conditions, while others would increase in relative proportion to visitor use levels. In the short term, user levels would remain approximately the same as existing levels. Over the long term, user numbers could increase somewhat over time, but such increases would be constrained by existing facility levels.

Regular maintenance-related activities would result in temporary increases in emissions of particulate matter in the immediate vicinity of such activities. Campfires, woodstoves, and fireplaces would continue to be subject to park regulations, and related emissions would not be expected to increase because the number of campsites and housing would remain much the same under Alternative 1 as under existing conditions and because campsites and housing are already full most of the year. Campfire-, woodstove-, and fireplace-related emissions would continue to affect air quality and visibility within the Wawona area under certain meteorological conditions. Emissions from prescribed burning would continue to be controlled through implementation of smoke management policies in the 2004 *Fire Management Plan*. Emissions from vehicle entrainment of road dust would continue to affect air quality, as discussed in previous sections. Road dust would increase in rough proportion to the number of vehicle-miles traveled within the park.

Local mobile sources would continue to include automobiles, trucks, and buses and would remain subject to state and federal emissions control standards and programs, which are expected to lead to a continuing decrease in emissions per vehicle-mile-traveled for the foreseeable future. In the future, the number of vehicles in Wawona on typically busy days would be essentially the same as under existing conditions; however, the number of days during which the plan would be in effect would increase, and, on an average basis, the number of vehicles would increase in rough proportion to the number of annual visitors. In general, the downward trend in emissions of ozone precursors per vehicle would more than offset the long-term incremental increase in the number of annual vehicle trips within Wawona. As discussed above, the anticipated reduction in emissions per vehicle-mile would decrease dramatically for ozone precursor compounds between existing 2004 conditions and 2020. However, in contrast to the ozone precursors, most of the particulate matter associated with vehicle use is related to entrainment of road dust rather than to exhaust. Thus, as explained above, particulate emissions would be expected to increase in the future in rough proportion to the number of vehicle-miles traveled within Wawona. With respect to ozone precursors, overall local emissions in Wawona under Alternative 1 would follow the regional downward trend relative to existing conditions, which would represent a regional, long-term, minor, beneficial effect. With respect to particulate matter, overall local emissions in Wawona under Alternative 1 could increase relative to existing conditions, resulting in a local, long-term, minor, adverse effect.

Summary of Alternative 1 Impacts. Under this alternative, air quality in the corridor would continue to be influenced by local pollution sources within the park and by regional sources upwind of the park. The relative importance of local and regional sources would continue to vary by season and by pollutant. Furthermore, nonwilderness portions of the corridor would be affected by local emissions sources to a much greater extent than wilderness portions. Local stationary sources would continue to be regulated under Mariposa County *Rules and Regulations*; some local area sources would continue to be subject to park regulations; and mobile sources would continue to be subject to state and federal tailpipe emissions standards.

With respect to ozone precursors, overall local emissions under Alternative 1 would follow the regional downward trend relative to existing conditions regardless of potential increases in long-term visitor levels, which would be a regional, long-term, minor, beneficial effect. With respect to particulate matter, overall local emissions under Alternative 1 could increase relative to existing conditions, resulting in a local, long-term, minor, adverse effect, because that pollutant is more closely linked to overall vehicle-miles traveled, which would increase over the long term, than to tailpipe exhaust emissions, which would decrease.

Cumulative Impacts

Cumulative effects to air quality are based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with potential effects of this alternative. The projects identified below include only those projects that could affect air quality within the river corridor or that could be affected by air pollutant sources within the river corridor.

Past Actions. Since 1950, the population of California has tripled, and the rate of increase in vehicle-miles traveled has increased sixfold. Air quality conditions within Yosemite National Park have been influenced by this surge in population growth and its associated emissions from related industrial, commercial, and vehicular sources in upwind areas as tempered by a burgeoning regulatory apparatus. Since the 1970s, emissions sources operating within the park, as well as California as a whole, have been subject to local stationary-source controls and state and federal mobile-source controls. With the passage of time, such controls have been applied to an increasing number of sources, and the associated requirements have become dramatically more stringent and complex. In the 1980s, restricted access policies were developed for use when traffic and parking conditions in Yosemite Valley become too congested. These policies have the effect of reducing the number of incoming vehicles and their related emissions until the traffic volume and parking demand in Yosemite Valley decrease sufficiently (as departing visitors leave the Valley) to stabilize traffic conditions.

Recent past project-specific actions that did not have a net adverse or beneficial effect on air quality, other than localized, short-term, moderate to major, adverse impacts due to construction activities, include:

- Infrastructure projects, such as Cascades Diversion Dam Removal; and Happy Isles Gauging Station Bridge Removal.
- Several trail and resource restoration projects, such as the Happy Isles Fen Habitat Restoration and the Merced River Ecological Restoration at Eagle Creek.

The El Portal Road Improvements Project, Segments A, B, and C had both locally adverse (short term during construction) and potentially regionally beneficial (long-term) effects on air quality. Short-term, construction-related effects included dust and other pollutant emissions associated with operation of construction equipment, earthmoving activities, and vehicle travel over unpaved surfaces. The safety improvements on Segments A, B, and C of El Portal Road facilitate regional transit service on that route, which could have a regional, long-term, minor, beneficial impact by reducing automobile trips.

Adoption of the 2000 *Yosemite Valley Plan* is another past project that could have a cumulative, beneficial, long-term effect on air quality. The *Yosemite Valley Plan* proposes to enhance the quality of the visitor experience in the Valley by reducing automobile congestion, limiting crowding, and expanding orientation and interpretation services. It also proposes traffic management systems and options for the size and placement of parking lots, both within and outside Yosemite Valley. Parking lot(s) outside the Valley could be used to intercept day visitors and shift those visitors to Valley-bound, hybrid diesel-electric shuttle buses.

Examples of past projects that could have a net cumulative, long-term, adverse effect on air quality include the 2004 *Fire Management Plan,* which could lead to increased use of prescribed burning techniques and could have an intermittent, long-term, adverse effect on local and regional air quality and visibility, depending on the extent to which it protects air resources.

Present Actions. Present actions in the region are separated below into three general categories: (1) projects anticipated to have a net long-term beneficial effect; (2) projects anticipated to have a net adverse, long-term effect; and (3) projects not anticipated to have a net adverse or beneficial, long-term effect.

Examples of current projects that could have a cumulative, long-term, beneficial effect on air quality include:

- Yosemite Valley Shuttle Bus Procurement, which replaces the existing fleet of 1986 diesel buses servicing Yosemite Valley with a new fleet of hybrid electric-diesel buses with lower emissions and greater fuel efficiency
- Yosemite Valley Shuttle Bus Stop Improvements, which promotes and improves the relative attractiveness of bus use
- Resource Management Building and the Curry Village Employee Housing, both of which reduce work/home commutes for some employees

Although the Yosemite Valley Shuttle Bus Stop Improvements Project has localized, short-term adverse effects (e.g., construction-related effects) associated with its implementation, its general goal is to improve regional transportation, circulation, and safety. Together, these bus-related projects would, individually and in combination, encourage travel to the park by alternative (non-private vehicle) modes and would have a long-term, beneficial effect on air quality.

Examples of current projects that could have a net cumulative, long-term, adverse effect on air quality include various development-related projects, such as the Yosemite Motels Expansion and the Mariposa County General Plan Update. Cumulative growth in the region would have localized, short-term, construction-related impacts; over the long term, these projects would generate emissions of ozone precursors and particulate matter primarily due to associated motor vehicle trips.

Examples of current projects that are not anticipated to have a net adverse or beneficial effect on air quality, other than short-term, localized impacts due to construction activities, include:

- Infrastructure plans and projects, such as the Cook's Meadow Ecological Restoration, Happy Isles Dam Removal, Lower Yosemite Fall Project, Replacement/ Rehabilitation of Yosemite Valley Sewer Line, Utilities Master Plan/East Yosemite Valley Utilities Improvement Plan, and South Fork Bridge Replacement.
- Several trail and resource restoration plans and projects, such as the Happy Isles to Vernal Fall Trail Reconstruction and the Parkwide Invasive Plant Management Plan

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are also separated below into three general categories: (1) projects anticipated to have a net beneficial, long-term effect; (2) projects anticipated to have a net adverse, long-term effect; and (3) projects not anticipated to have a net adverse or long-term, beneficial effect.

Examples of projects that could have a cumulative, long-term, beneficial effect on air quality include:

- Tuolumne Meadows Concept Plan
- Tuolumne Wild and Scenic River Management Plan
- Update to the *Yosemite Wilderness Management Plan*

Although projects allowed for under these plans could have localized, short-term adverse effects (e.g., construction-related effects), the general goal of each of these plans is to protect and enhance resources, including air resources, in Yosemite National Park. As such, these plans would be expected to have long-term, beneficial, effect on air quality.

Reasonably foreseeable future actions that could have a net cumulative, long-term, adverse effect on air quality include:

- El Portal Concept Plan
- Yosemite campground plans and projects that could increase the number of available campsites, such as the Curry Village and East Yosemite Valley Campground Improvements and Out-of-Valley Campground Plan.
- Various development-related projects, such as the Environmental Education Campus Development Program, Indian Cultural Center, and the Yosemite Lodge Area Development.

The Curry Village and East Yosemite Valley Campground Improvements and the Out-of-Valley Campground Plan could construct additional campsites, which could result in increased local emissions from campfires, unless these projects were to provide for group fire rings rather than fire rings at each campsite.

Cumulative growth in the region would have localized, short-term, construction-related impacts; over the long term, these projects would generate emissions of ozone precursors and particulate matter primarily due to associated motor vehicle trips.

Reasonably foreseeable future actions not anticipated to have a net adverse or beneficial effect on air quality, other than short-term, localized impacts due to construction activities, include:

- Infrastructure and transportation projects, such as the El Portal Road Improvements Project and the Northside-Southside Drive Repaving
- Yosemite campground rehabilitation and parking improvement projects, such as the Wawona Campground Rehabilitation; and Yosemite Village Interim Parking Improvements
- Trail restoration projects, such as the Red Peak Pass Trail Rehabilitation
- The Visitor Use and Floodplain Restoration Program

Many of the above-noted cumulative projects would result in local, short-term, major, adverse effects on air quality due to construction activities, and, in some cases, these effects would occur within the Merced River corridor. With respect to long-term effects, a distinction can be made between ozone and particulate matter. For ozone, regional emissions trends suggest that the combination of the beneficial effect of ongoing regional, state, and federal regulatory controls (particularly mobile-source control programs) with the adverse effect of existing and future land use development and associated stationary, area, and mobile emissions sources, would result in a regional, long-term, moderate, beneficial effect. That is, the beneficial effect of past and present actions that regulate stationary and mobile emissions sources and reasonably foreseeable future actions that have the potential to reduce vehicle trips and vehicle-miles traveled would offset the adverse effect of ozone precursor emissions associated with increased cumulative growth in the region, leading to a gradual improvement in ozone air quality.

For particulate matter, the net cumulative effect is more difficult to determine because ambient concentrations of particulate matter reflect primary (i.e., directly emitted) particles as well as secondary (i.e., derived through photochemical reactions involving precursor pollutants) particles derived from emissions of volatile organic compounds, nitrogen oxides, and sulfur oxides. One of the principal sources of directly emitted particles is entrainment of dust by vehicles moving over paved roads, and this component of particulate matter would increase in proportion to increases in vehicle-miles traveled associated with cumulative growth. One of the secondary sources of particulate matter, sulfur oxides, would also continue to increase with cumulative growth. In contrast, as discussed above in connection with ozone, emissions of volatile organic compounds and nitrogen oxides would continue a downward trend despite cumulative growth, and thus, their contribution to particulate matter concentrations would diminish. Furthermore, unlike ozone, which is considered a regional pollutant, particulate matter reflects both local and regional sources, and the relative influence of these two basic types of sources changes from day to day. Thus, given the opposing emissions trends and the varying relative contributions of regional and local emissions sources, it would be speculative to conclude that the cumulative effect relative to particulate matter would be beneficial or adverse; however, the opposing emissions trends would tend to diminish the magnitude of the effect, regardless of whether the effect would be beneficial or adverse.

Since Alternative 1 would not involve any substantial construction projects, the local, short-term, major, adverse effects on air quality due to construction activities that are cited above would be due to the cumulative projects. Over the long term, with respect to ozone, conditions in the corridor would be determined almost entirely by regional emissions trends rather than by local emissions sources under Alternative 1; as discussed above, the long-term, regional effect would be beneficial, primarily due to the emissions reductions expected to occur with implementation of ongoing state and federal mobile-source control programs. With respect to particulate matter, conditions in the river corridor would be determined by both regional sources and local sources, and the relative influence of these two types of sources would vary from day to day and season to season. Given the opposing emissions trends between primary and secondary sources of particulate matter and the varying relative contributions of regional and local emissions sources, it would be speculative to conclude that the combined effect of cumulative actions and Alternative 1 would be beneficial or adverse with respect to particulate matter; however, opposing emissions trends would tend to diminish the magnitude of the effect, regardless of whether the effect would be beneficial or adverse.

Impairment

With respect to ozone precursors, overall local emissions under Alternative 1 would follow the regional downward trend relative to existing conditions, which would represent a regional, long-term, minor, beneficial effect. With respect to particulate matter, overall local emissions under Alternative 1 could increase relative to existing conditions, resulting in a local, long-term, minor, adverse effect. Overall, implementation of Alternative 1 would not impair air quality in the park.

Noise

Analysis

The following discussion provides an overview of the types of impacts to the ambient noise environment associated with Alternative 1 that could occur within each segment of the Merced River corridor. Alternative 1 provides a baseline for comparing existing conditions in the Merced River corridor with each action alternative. Alternative 1 includes the application of the elements of the Merced River Plan (boundaries, classifications, ORVs, management zones and River Protection Overlay, and the Section 7 Determination process), as well as the elements of the February 2004 User Capacity Management Program, and other park policies. However, Alternative 1 does not include full implementation of the VERP program.

Natural quiet is not listed as an ORV along any of the river segments. However, one important aspect of this environmental condition – the enjoyment of natural river sounds – is integrated into the recreation ORVs for three segments of the river, two segments in designated Wilderness (the wilderness of the main stem and the South Fork of the Merced River) and also the area below Wawona. That aspect would continue to be considered for protection and enhancement in those areas. Generally, policies and actions that protect and enhance natural quiet in the corridor arise not from the Wild and Scenic Rivers Act, but from such documents as the 1989 *Yosemite Wilderness Management Plan* (NPS 1989b) and *Reference Manual RM 47 Soundscape Preservation and Noise Management* (NPS 2003b).

Under Alternative 1, the acoustical environment in wilderness areas would generally continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights. The acoustical environment in nonwilderness areas would generally continue to be shaped by human-caused sources of noise, such as vehicles and recreational activities, and by natural sources of sound, such as rushing water and wind. A parkwide monitoring effort in 1994 documented that aircraft could be heard 54% of the time in quiet areas (NPS 1994f). Non-aircraft noise can also be heard at other popular wilderness destinations close to developed areas and roads, such as wall and rims of the Valley.

Impacts in Wilderness. The enjoyment of natural river sounds is integrated into the recreation ORVs in designated Wilderness (the wilderness areas of the main stem and the South Fork of the Merced River). That aspect would continue to be considered for protection and enhancement in wilderness areas.

User capacity within wilderness areas of Yosemite National Park is addressed through the trailhead quota system and monitoring of wilderness resource conditions. Under Alternative 1, use of trails in wilderness areas would continue consistent with existing conditions. It is anticipated that annual day use of easily accessible wilderness areas (e.g., the trail to Half Dome) could increase with the projected increase in user demand.

In some wilderness areas, high-altitude aircraft overflights would continue to be the principal source of adverse noise impacts. Noise from overflights, which is an issue that is national in scope, may worsen over the long term, if there continues to be an upward national trend in the number of aircraft flights. The permit system under the *Wilderness Management Plan* would continue to minimize the noise associated with visitor use in wilderness areas by restricting the number of overnight visitors. The continuation of existing conditions would be expected to have local, long-term, negligible, adverse impacts on the ambient noise environment.

Impacts in Yosemite Valley. Under Alternative 1, the acoustical environment in the Yosemite Valley segment of the river corridor would generally continue to be shaped by human-caused sources of noise and by natural sources of sound. Local conflicts between noise-sensitive uses and vehicular noise would continue to occur over the long term and would increase in severity due to the expected cumulative increase in visitation levels and related vehicular activity.

More specifically, in the short term, visitor levels would remain approximately the same as existing levels. Over the long term, visitor numbers could increase somewhat over time, but such increases would be constrained by existing facility levels. The gradual increase in visitation and related vehicular traffic would lead to an incremental increase in roadside noise levels. On typically busy days, roadside noise levels would be essentially the same as under existing conditions, since the same relative number of visitors would be allowed to travel to the Valley.

Developed areas of Yosemite Valley would continue to experience a local, long-term, minor, adverse effect due to the concentration of vehicular noise and human activity in this area.

In both wilderness and nonwilderness areas of the Valley, maintenance activities (e.g., helicopter use in support of park operations) would continue under this alternative, and such activities would result in local, short-term, minor, adverse noise impacts, but it would be speculative to conclude that such activities would increase or decrease in frequency or duration.

Impacts in the Gorge. Under Alternative 1, the acoustical environment in areas of the Gorge segment of the river corridor zoned 1A, 2A, 2A+, and 2B would continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights and distant roadway noise. The acoustical environment in areas zoned 2C, 2D and 3C would continue to be shaped by human-caused sources of noise and by natural sources of sound. Local conflicts between noise-sensitive uses and vehicular noise would continue to occur over the long term and would increase in severity due to the expected cumulative increase in visitation levels and related vehicular activity.

In the short term, visitor levels would remain approximately the same as existing levels. Over the long term, visitor numbers could increase somewhat over time, but such increases would be constrained by existing facility levels. The gradual increase in visitation and related vehicular traffic would lead to an incremental increase in roadside noise levels. On typically busy days, roadside noise levels would be essentially the same as under existing conditions, since the same relative number of visitors would be allowed to travel to the Valley. Areas zoned 2C, 2D and 3C would continue to experience a local, long-term, minor, adverse effect due to the concentration of vehicular noise in those areas.

Impacts in El Portal. Under Alternative 1, the boundary for the El Portal segment of the river corridor would remain the same as that shown in the Merced River Plan, which would remain a the 100-year floodplain or River Protection Overlay, whichever is greater. This boundary does not account for precise locations of El Portal ORVs; "natural quiet" is not listed as an ORV along any of the river segments. One important aspect of this environmental condition – the enjoyment of natural river sounds – is integrated into the recreation ORVs, but is not applicable to this segment of the river. As such, policies and actions that protect and enhance natural quiet in this segment would continue to do so regardless of the boundary location.

Under Alternative 1, management zoning in the El Portal segment of the corridor would be limited to 2C and 3C zoning. The base zone through much of this segment would be Day Use (2C). The acoustical environment in these areas would continue to be shaped by human-caused sources of noise and by natural sources of sound. Local conflicts between noise-sensitive uses and vehicular noise would continue to occur over the long term and would increase in severity due to the expected cumulative increase in visitation levels and related vehicular activity.

In the short term, visitor levels would remain approximately the same as existing levels. Over the long term, visitor numbers could increase somewhat over time, but such increases would be constrained by existing facility levels. The gradual increase in visitation and related vehicular traffic would lead to an incremental increase in roadside noise levels. On typically busy days, roadside noise levels would be essentially the same as under existing conditions, since the same relative number of visitors would be allowed to travel to the Valley. These areas would continue to experience a local, long-term, minor adverse effect due to the concentration of vehicular noise and human activity in this area.

Impacts in Wawona. Under Alternative 1, the acoustical environment in the Wawona segments of the river corridor would generally continue to be shaped by human-caused sources of noise and by natural sources of sound. Local conflicts between noise-sensitive uses and vehicular noise would continue to occur over the long term and would increase in severity due to the expected cumulative increase in visitation levels and related vehicular activity.

In the short term, visitor levels would remain approximately the same as existing levels. Over the long term, visitor numbers could increase somewhat over time, but such increases would be constrained by existing facility levels. The gradual increase in visitation and related vehicular traffic would lead to an incremental increase in roadside noise levels. On typically busy days, roadside noise levels would be essentially the same as under existing conditions, since the same relative number of visitors would be allowed to travel to the Valley. Wawona would continue to experience a local, long-term, minor, adverse effect due to the concentration of vehicular noise and human activity in this area.

In both wilderness and nonwilderness areas of Wawona, maintenance activities (e.g., helicopter use in support of park operations) would continue under this alternative, and such activities would result in local, short-term, minor, adverse noise impacts, but it would be speculative to conclude that such activities would increase or decrease in frequency or duration.

Summary of Alternative 1 Impacts. The acoustical environment in wilderness areas would not be affected by Alternative 1, but would continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights. The acoustical environment in nonwilderness areas would continue to be shaped by human-caused sources of noise and by natural sources of sound. Alternative 1 would accommodate a gradual increase in annual visitation (higher use on non-peak days), which could lead to a local, long-term, negligible to minor, adverse effect along the various roads that traverse the corridor in nonwilderness areas.

Cumulative Impacts

Cumulative effects to the ambient noise environment are based on analysis of past, present, and reasonably foreseeable actions in the Yosemite region in combination with potential effects of this alternative. The projects identified below include only those projects that could affect noise within the river corridor or could be affected by noise sources within the corridor.

Past Actions. Development of facilities that include various sources of noise has occurred in and near some segments of the river corridor. Such facilities include roadways, campgrounds, lodging, and administrative buildings. Generally, these facilities were developed with limited consideration of potential noise impacts. From a regulatory standpoint, relevant state and federal noise standards typically apply to individual types of noise sources, such as automobiles and buses, rather than to overall noise levels, but the National Park Service has adopted policies (restricted access policies and the *Wilderness Management Plan*) that indirectly affect overall noise levels in the river corridor. The restricted access policies were developed for use when traffic and parking conditions in Yosemite Valley are congested. The plan has the indirect effect of limiting the amount of vehicle noise during peak periods by restricting the number of incoming vehicles until the traffic volume and parking demand in Yosemite Valley decrease sufficiently (as departing visitors leave the Valley) to stabilize traffic conditions.

The *Wilderness Management Plan* was developed to preserve a wilderness environment in which the natural world along with the processes and events that shape it are largely untouched by human interference. Implementation of the permit system for overnight camping under the *Wilderness Management Plan* reduces potential noise impacts in those areas where natural quiet is an important element of the visitor experience.

Recent past project-specific actions that did not have a net adverse or beneficial effect on the ambient noise environment, other than localized, short-term, moderate to major, adverse impacts due to construction activities, include:

- Infrastructure projects, such as Cascades Diversion Dam Removal, and Happy Isles Gauging Station Bridge Removal.

- Several trail and resource restoration projects, such as Happy Isles Fen Habitat Restoration, and Merced River Ecological Restoration at Eagle Creek. El Portal Road Improvements Project, Segments A, B, and C had both locally adverse (short-term during construction) and beneficial (long-term) effects on noise. Short-term, construction-related effects included noise from heavy equipment operations. The safety improvements on Segments A, B, and C of El Portal Road facilitate regional transit service on that route, which could have a local, long-term, negligible to minor, beneficial impact by replacing automobile trips with a smaller number of transit vehicle trips, depending on transit ridership levels.

Examples of past planning efforts that could have a net cumulative, local, long-term, adverse effect on the ambient noise environment include:

- The *Fire Management Plan*, which could lead to increased use of prescribed burning techniques and localized noise impacts associated with heavy machinery use.

Adoption of the 2000 Yosemite Valley Plan is another past project that could have a net long-term, beneficial effect on the ambient noise environment. The Yosemite Valley Plan proposes to enhance the quality of the visitor experience in Yosemite Valley by reducing automobile congestion, limiting crowding, and expanding orientation and interpretation services. It also proposes traffic management systems and options for the size and placement of parking lots, both within and outside Yosemite Valley. Parking lot(s) outside the Valley could be used to intercept day visitors and shift those visitors to Valley-bound shuttle buses.

Present Actions. Present actions in the region are separated below into three general categories: (1) projects anticipated to have a net beneficial, long-term effect; (2) projects anticipated to have a net adverse, long-term effect; and (3) projects not anticipated to have a net adverse or beneficial, long-term effect.

Examples of current projects that could have a cumulative, beneficial, long-term effect on the ambient noise environment include:

- Yosemite Valley Shuttle Bus Procurement, which replaces the existing fleet of 1986 diesel buses servicing Yosemite Valley with a new fleet of low-noise hybrid electric-diesel buses with noticeably quieter operations.
- Yosemite Valley Shuttle Bus Stop Improvements, which will improve the relative attractiveness of bus use, thereby reducing private automobile trips.
- Resources Management Building and Curry Village Employee Housing, both of which will reduce in-Valley vehicle trips for some employees.

Although most of the aforementioned projects would have localized, short-term, adverse effects (e.g., construction-related effects), the general goal of these projects is to improve regional transportation, circulation, and safety and to reduce private automobile use. Together, these projects would, individually and in combination, reduce private automobile use and would therefore have a long-term, beneficial effect on the ambient noise environment.

To the extent that the bus-related projects cited above would replace automobile trips in the Valley with bus trips, the anticipated beneficial effect would depend upon ridership levels (and the corresponding number of automobile trips that would be avoided). The new buses are noticeably quieter than typical diesel-powered buses. Thus, these projects have the potential to contribute to a cumulative beneficial effect in the Valley, but also have the potential to offset some of the benefit with low ridership levels.

Examples of current projects that could have a net cumulative, local, long-term, adverse effect on the ambient noise environment include:

- Various development-related projects, such as Yosemite Motels Expansion; and the Mariposa County General Plan (Update).

Cumulative growth in the region would have localized, short-term, construction-related impacts; over the long term, these projects would have an adverse effect on local roadside noise levels due to increased vehicle trips.

Examples of current projects that are not anticipated to have a net adverse or beneficial effect on the ambient noise environment, other than short-term, localized impacts due to construction activities, include:

- Infrastructure projects, such as Happy Isles Dam Removal; Lower Yosemite Fall; Replacement/Rehabilitation of Yosemite Valley Force Main Sewer Line; Utilities Master Plan/East Yosemite Valley Utilities Improvement Plan; Rehabilitate Yosemite Valley Campground Restrooms; and South Fork Bridge Replacement.

Several trail and resource restoration plans and projects, such as Cook's Meadow Ecological Restoration; Happy Isles to Vernal Fall Trail Reconstruction; Merced River Canyon Trail Acquisition; and Parkwide Invasive Plant Management Plan.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into three general categories: (1) projects anticipated to have a net beneficial, long-term effect; (2) projects anticipated to have a net adverse, long-term effect; and (3) projects anticipated not to have a net adverse or net beneficial, long-term effect.

Cumulative projects that could have a net, long-term, beneficial effect on the ambient noise environment include:

- Tuolumne Meadows Concept Plan.
- Tuolumne Wild and Scenic River Comprehensive Management Plan.
- Update to the *Yosemite Wilderness Management Plan.*

Although projects allowed for under these plans could have localized, short-term adverse effects (e.g., construction-related effects), the general goal of each of these plans is to protect and enhance conditions and resources, including addressing noise issues, in areas of Yosemite National Park. As such, these plans would be expected to have a beneficial, long-term effect on the ambient noise environment.

Reasonably foreseeable future actions that could have a net cumulative, long-term, adverse effect on the ambient noise environment include:

- El Portal Concept Plan.
- Yosemite campground projects and plans that could expand campgrounds, such as Curry Village and East Yosemite Valley Campground Improvements; and Out-of-Valley Campground Plan.
- Various development-related projects, such as Environmental Education Campus Development Program; Indian Cultural Center; and Yosemite Lodge Area Development.

Curry Village and East Yosemite Valley Campground Improvements and Out-of-Valley Campground Plan could expand existing campgrounds, which could result in increased localized noise impacts.

Cumulative growth in the region, would have localized, short-term, construction-related impacts; over the long term, these projects would have an adverse effect on local roadside noise levels due to increased vehicle trips.

Reasonably foreseeable future actions not anticipated to have a net adverse or beneficial effect on the ambient noise environment, other than short-term, localized impacts due to construction activities, include:

- Infrastructure and transportation projects, such as El Portal Road Improvements Project (Segment D); and Northside-Southside Drive Repaving.
- Yosemite campground rehabilitation and parking improvements projects, such as Wawona Campground Rehabilitation; and Yosemite Village Interim Parking Improvements.
- Ecological and trail restoration projects such as Red Peak Pass Trail Rehabilitation and Visitor Use and Floodplain Restoration Program.
- El Portal Old Wastewater Treatment Facility Removal

Many of the above cumulative projects would result in local, short-term, moderate to major, adverse effects on the ambient noise environment due to construction activities, and in some cases, these effects would occur within the corridor. Over the long term, statewide growth and development would accelerate the national trend in increased air travel, resulting in a local, long-term, minor, adverse effect in some portions of the corridor in wilderness areas due to increased aircraft overflights and associated intrusive noise levels. In nonwilderness areas, cumulative actions that would provide for increased transit use and reduced automobile use or that would reduce vehicle trips in the Valley could result in a local, long-term, minor, beneficial effect within the corridor based on the type of technology that is being implemented for transit purposes, but depending on the extent to which private automobile trips are diverted to transit.

Since Alternative 1 would not involve any substantial construction projects, the local, short-term, moderate to major, adverse cumulative effects on noise due to construction activities that are cited above would be due to the cumulative projects. Over the long term, in wilderness areas, noise impacts in the corridor would be determined almost entirely by cumulative trends in air travel rather than by in-park noise sources under Alternative 1; as discussed above, the national trend in air travel if it continues to increase could result in a local, long-term, minor, adverse effect on the ambient noise environment. In nonwilderness areas, the gradual increase in annual visitation to the park would likely offset the beneficial effects of those cumulative actions that would tend to reduce vehicle trips and their associated noise, resulting in a local, long-term, negligible to minor, adverse effect on noise levels in those portions of the corridor traversed by roadways.

Impairment

Alternative 1 would accommodate a gradual increase in annual visitation (higher use on non-peak days), which could lead to a local, long-term, negligible to minor, adverse effect along the various roads that traverse the corridor in nonwilderness areas. The adverse effect of this alternative on park soundscapes would not be of sufficient magnitude to impair park resources.

Cultural Resources

Archeological Resources

Analysis

The following discussion provides an overview of the types of impacts to archeological resources that could occur within each segment of the Merced River corridor from continued implementation of the park's existing user capacity management program without the VERP program. Effects on archeological resources due to the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Archeological resource components of the cultural ORV include historic and prehistoric resources related to occupation and homesteading, hunting, travel and trade, the U.S. Cavalry, and wilderness tourism. Due to their remote location and the low level of use occurring in most parts of the Yosemite Wilderness, archeology resources remain largely undisturbed.

User capacity within wilderness areas of Yosemite National Park is addressed through wilderness trailhead quotas and monitoring of wilderness resource conditions under the Wilderness Impact Management System. In Alternative 1, management of the wilderness areas would continue under the existing trailhead quota system and WIMS.

The wilderness trailhead quotas have been in place for decades and do not directly affect archeological resources. Because there is currently unused capacity under the trailhead quota system, some additional demand could be accommodated. The addition of more visitors in the wilderness could have a local, long-term, negligible, adverse impact on archeological resources due to the increased likelihood of visitor-related damage, such as surface collection, vandalism, erosion, and trampling. Overall, archeological resource components of the ORV would be protected and enhanced under this alternative.

Impacts in Yosemite Valley. Archeological resource components of the cultural ORV within Yosemite Valley include several historic and prehistoric sites and districts that relate to homesteading, long-term and seasonal occupation, early tourism, U.S. Cavalry, historic roads and trails, and early park administration.

Visitor capacity in the Valley is not actively managed on a daily basis but is regulated through facility capacities, primarily related to overnight accommodations and parking. Limits on these facilities restrict the number of overnight and day visitors to the Valley. Current management practices sometimes result in significant traffic on peak summer weekends and holidays, as visitors circle through the Valley looking for parking. When park management determines that traffic congestion in the Valley is creating unacceptable human safety and resource impacts, restricted access policies are put into effect to manage traffic.

As park visitation increases through 2020, the limitations on parking and lodging in the Valley under Alternative 1 would restrict the number of visitors that can access the many cultural resources within the Valley. However, since Valley visitation is currently below peak levels reached in the last decade, there may be sufficient capacity to accommodate some increased visitation between now and 2020.

Under Alternative 1, there would be no change to archeological resources in the Valley in the short term. In the long term, there could be local, minor, adverse effects related to increased visitor use and a corresponding increase in the likelihood of visitor-related damage such as vandalism, surface collection, erosion, and trampling.

Impacts in the Gorge. Archeological components of the cultural ORV for the Gorge segment include historic and prehistoric sites related to occupation, the Civilian Conservation Corps, early roads and trails, road development, and early tourism. Many parts of the gorge are inaccessible to visitors.

Under Alternative 1, user capacity would continue to be restricted by the existing level of parking in the Gorge. The current parking capacity would allow for some additional use during the nonpeak season. During peak periods when restricted access is implemented for Yosemite Valley, parking areas in the Gorge become more congested. The existing limits on available parking in the Gorge are expected to limit use levels in this area to the current peak level. Since use levels in the Gorge are relatively low and access is limited by available parking, Alternative 1 is not expected to have any effect on archeological resources for this segment in the long or short term.

Impacts in El Portal. Archeological resources for El Portal consist of some of the oldest prehistoric sites within the Merced River corridor. Prehistoric and historic archeological sites and districts in El Portal include examples of villages, homesteads, early tourism, and the mining, railroad, and timber industries.

The boundary for the El Portal segment of the river in this alternative is based upon the 100-year floodplain or the River Protection Overlay, whichever is greater. The zoning for the El Portal corridor under this alternative calls for park administrative uses (3C zoning) in existing developed areas north and south of the river, and Day Use (2C) zoning for undeveloped areas directly adjacent to the river. Although this zoning might allow for future development of visitor facilities, much of the 2C area is within the River Protection Overlay and is unlikely to be developed.

The area zoned Park Operations and Administration (3C) could allow for the development of facilities or the removal of existing facilities. Most of the facilities currently located in the 3C zones were constructed prior to the river's designation as Wild and Scenic. Much of this area contains archeological resources, and while some of these have been previously disturbed, future development has the potential to adversely affect these resources. If this development or removal occurred and earth-moving activities were required, then intact archeological resource(s), which are identified as an ORV, could be disturbed. This is considered a local, long-term, minor to major, adverse impact, and the intensity of impact would depend on the nature, location, and design of the facility to be developed or removed as well as the quantity and data potential of the archeological resource(s) affected. These actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and with other elements of the Merced River Plan. Under the Merced River Plan, ORVs must be protected on a segment-wide basis.

The areas zoned Day Use (2C) could allow construction of new facilities and hardened surfaces and the removal or relocation of existing facilities. Development within these management zones also could concentrate human use at specific locations in El Portal, which could affect archeological resources by causing trampling, surface collection, and erosion. However, by providing more structured visitor experiences in the river corridor, use could be directed away from known archeological resources, which would reduce the likelihood of visitor-related damage. If such development or construction occurred and earth-moving activities were required, then intact archeological resource(s), which are identified as an ORV, could be disturbed. This is considered a local, long-term, minor to major, adverse impact, and the intensity of impact would depend on the nature, location, and design of the facility to be developed or removed as well as the quantity and data potential of the archeological resource(s) affected. Like the actions in the 3C zones, these actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and with other elements of the Merced River Plan. Under the Merced River Plan, ORVs must be protected on a segment-wide basis. Because the river corridor boundary in this alternative would be smaller than under the three action alternatives, fewer archeological resources fall within the river corridor boundary. The absence of a VERP framework in this alternative would not enable the park to monitor the effects of use-related impacts on archeological resources.

User capacity for visitors within El Portal is currently managed via parking capacity in the area. Continuation of the existing user capacity program in the El Portal segment would not change the visitor facilities available on adjacent private lands, the lack of visitor facilities on park lands, or the amount of informal parking available. Because current use does not exceed existing parking capacity, there is potential for an increase in visitor use in El Portal adjacent to the river. This potential increase could have long-term negligible to minor adverse impacts to cultural resources. Additionally, continuation of existing user capacity management policies under the No Action Alternative would not require changes to employee housing, amenities, or other facilities located in El Portal. Park planning efforts and future development in El Portal would continue to be based on the goals of the *General Management Plan* and on existing utility capacities. Since the *General Management Plan* calls for increased employee housing in El Portal, it is likely that the level of employee housing would increase in the future, while remaining within utility capacities.

Overall, Alternative 1 is expected to result in long-term, minor to major, adverse effects on archeological resources within the El Portal segment of the river corridor.

Impacts in Wawona. Archeological resources in Wawona include historic and prehistoric sites and districts that relate to homesteading, long-term and seasonal occupation, early tourism, the U.S. Cavalry, historic roads and trails, and early park administration.

Visitor capacity in Wawona is not actively managed but is limited through available overnight lodging and parking areas on park lands. Visitor lodging is also provided on private lands within the river corridor. Continuation of the existing user capacity policies in Wawona could allow for a slight increase in visitor use over the next few decades, which could increase the likelihood of visitor-related damage to archeological resources such as surface collection, vandalism, erosion, and trampling. Therefore, the existing user capacity program in Wawona could result in local, long-term, minor, adverse impacts to archeological resources.

Summary of Alternative 1 Impacts. Compliance with existing park policies, including the 1999 Programmatic Agreement, and federal laws, such as the National Historic Preservation Act, would help ensure that the cultural ORVs in each river segment are being protected and enhanced.

Alternative 1 would continue existing user capacity programs for areas within the Merced River corridor. User capacity is managed through trailhead quotas in wilderness areas and primarily through facility-based capacities in most other areas. Continuation of these existing user capacity programs is not expected to result in any changes to cultural resource ORVs in the short term. In the long term, Alternative 1 is expected to result in a local, long-term, minor, adverse impact to archeological resources due to the increased likelihood of visitor-related damage to these resources and the increased likelihood of development outside of the El Portal river corridor boundary.

Cumulative Impacts

Cumulative effects on archeological resources are based on an analysis of past, present, and reasonably foreseeable future actions in the Yosemite region. The projects identified below include only those projects that could affect archeological resources within the river corridor or in the park vicinity.

Past Actions. Archeological resources are subject to damage from development, vandalism, visitor access, and natural processes such as flooding and wildland fires.

In general, archeological resources within the Merced River corridor are the result of thousands of years of human occupation. Development of facilities within the river corridor has disturbed or destroyed numerous archeological resources and compromised the integrity of numerous other such resources. Park projects from the recent past that have had a minor, adverse effect on historic archeological resources within the river corridor include:

- Cascades Diversion Dam Removal

Present Actions. Archeological resource sites in the Wilderness, Yosemite Valley, Gorge, El Portal, and Wawona segments of the river corridor are considered to be at risk due to existing facility development. These sites are at or adjacent to trails, structures, utility systems, and other facilities and are subject to ongoing disturbances such as trampling, surface collection, and ground disturbance associated with facility maintenance. Certain specific projects have been mitigated to have no adverse effect, these include:

- Lower Yosemite Fall Project
- Cook's Meadow Ecological Restoration
- South Fork Bridge Replacement
- Utilities Master Plan/East Yosemite Valley Utilities Improvement Plan

Reasonably Foreseeable Future Actions

The extensive grading and ground disturbance that could be required for the reasonably foreseeable future projects listed below could disturb individual archeological resources. Each of these projects is within an archeologically sensitive area, such as a river valley or a mountain meadow. Specific impacts would depend on the nature, location, and design of the facility to be developed or removed as well as the quantity and data potential of the archeological resource(s) affected. Any disturbance of an individual archeological resource is considered to be a long-term, adverse impact.

- Curry Village and East Yosemite Valley Campgrounds Improvements
- El Portal Road Improvements Project (Segment D)

- Indian Cultural Center
- Wawona Campground Rehabilitation
- Yosemite Lodge Area Redevelopment
- Yosemite Village Interim Parking Improvements
- El Portal Concept Plan
- Tuolumne Meadows Concept Plan
- El Portal Old Wastewater Treatment Facility Removal

Overall, these cumulative actions in combination with Alternative 1 could have a net long-term, moderate, adverse impact on archeological resources with the Merced River corridor.

Impairment

Alternative 1 could result in local, long-term, minor to moderate, adverse effects on archeological resources. These effects are not expected to impair the park's archeological resources for future generations.

National Historic Preservation Act Section 106 Summary

Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in no adverse effect to historic properties listed in or eligible for listing in the National Register of Historic Places, because the plan does not prescribe specific action. Future actions that are allowed under the proposed alternative would undergo environmental review to determine potential effects on historic properties.

Traditional Cultural Resources

Analysis

The following discussion provides an overview of the types of impacts to traditional cultural resources that could occur within each segment of the Merced River corridor from implementation of the park's user capacity management program without the VERP program. Effects on traditional cultural resources due to the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Traditional cultural resources in the wilderness include continuing uses such as the travel/trade routes connecting the east and west slopes of the Sierra Nevada range. Existing conditions of these travel/trade routes (which includes the routes themselves and the American Indian's ability to access these routes) are good. User capacity within wilderness areas of Yosemite National Park is currently addressed through trailhead quotas and monitoring of wilderness resource conditions under the Wilderness Impact Management System. In Alternative 1, management of the wilderness areas would continue under the existing trailhead quota system and WIMS.

The wilderness trailhead quotas have been in place for decades and do not directly affect traditional cultural resources. Because there is currently unused capacity under the trailhead quota system, some additional demand could be accommodated. The addition of more visitors in the wilderness could have a local, long-term, minor, adverse impact on traditional cultural resources due to the increased likelihood of visitor-related damage to the trails and an increased likelihood for encounters with other visitors.

Impacts in Yosemite Valley. Traditional cultural resources in Yosemite Valley encompass many natural and cultural features throughout the Valley that are traditionally valued by local American Indian groups, including gathering areas, religious sites, village sites, and cemeteries.

Currently some of these areas are experiencing moderate adverse effects from concentrated visitor-use such as trampling and erosion. Other traditional cultural resources are actively being managed through the use of prescribed fire and invasive plant removal by the National Park Service (NPS 1997p). Under Alternative 1 there would be no change to traditional cultural resources in the Valley in the short term. In the long term, there could be local, minor, adverse effects related to increased visitor use and a corresponding increase in the likelihood of visitor-related damage, such as vandalism, erosion, and trampling.

Impacts in the Gorge. Traditional cultural resources in the Gorge segment include gathering areas and villages. Traditional cultural resources in the gorge are actively being managed through the use of prescribed fire and invasive plant removal by the National Park Service (NPS 1997p). Under Alternative 1, user capacity would continue to be restricted by the existing level of parking in the Gorge. Use levels in the Gorge are generally relatively low, as access is limited by available parking and topography. For example, during peak periods when restricted access is implemented for Yosemite Valley, parking areas in the Gorge become more congested. The existing limits on available parking in the Gorge are expected to limit use levels in this area to the current peak level. This parking capacity would allow for some additional use during the non-peak season. These use levels could increase in the nonpeak season, which could have both short term and long term, minor, adverse effects on traditional cultural resources for the segment under Alternative 1.

Impacts in El Portal. Traditional cultural resources in El Portal consist of, but are not limited to, gathering areas, cemeteries, geological features of traditional spiritual importance, and prehistoric and historic village sites. Like Yosemite Valley, contemporary associated tribes consider all of El Portal to be a traditional use area.

Currently, some of these areas are experiencing adverse effects from concentrated human-use due to roads, housing, parking, and other amenities located in proximity to El Portal's traditional cultural resources. These effects include trampling and erosion. Other traditional cultural resources are actively being managed through the use of prescribed fire and invasive plant removal by the National Park Service (NPS 1997p).

The boundary for the El Portal segment of the river in this alternative is based on the 100-year floodplain or the River Protection Overlay, whichever is greater. The zoning proposed for the El Portal corridor under Alternative 1 calls for Park Operations and Administration (3C) in existing developed areas north and south of the river, and Day Use (2C) for undeveloped areas directly adjacent to the river. Although this zoning plan might allow for future development of visitor facilities, much of the 2C zone is within the River Protection Overlay and is unlikely to be developed. The areas zoned 3C south and north of the river have the potential to be developed as administrative facilities. If development occurs in these zones, there is a potential to adversely affect traditional cultural resources. However, no new development would occur inside the corridor without further site-specific planning and compliance that would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and the existing elements of the Merced River Plan. The adverse effects of new development would likely be local, long term, and negligible to moderate.

User capacity for visitors within El Portal is currently managed via parking capacity in the area. Continuation of the existing user capacity program in the El Portal segment would not change the visitor facilities available on adjacent private lands, the lack of visitor facilities on park lands, or the amount of informal parking available. Additionally, continuation of user capacity management policies under the No Action Alternative would not require changes to employee housing in El Portal, amenities, or other facilities located there. Park planning efforts and future development in El Portal would continue to be based on the *General Management Plan* and on existing utility capacities. Since the *General Management Plan* calls for increased employee housing in El Portal, it is likely that the level of employee housing would increase in the future, while remaining within utility capacities. Therefore, continued implementation of the existing user capacity program is not expected to result in any changes to traditional cultural resources in El Portal.

Overall, Alternative 1 is expected to result in long-term, negligible to moderate, adverse effects on traditional cultural resources within the El Portal segment of the river corridor.

Impacts in Wawona. Traditional cultural resources in Wawona include, but are not limited to, gathering areas, cemeteries, and village sites. Currently, some of these areas are experiencing adverse effects of concentrated visitor-use such as trampling and erosion. Other traditional cultural resources are actively being managed through the use of prescribed fire and invasive plant removal by the National Park Service (NPS 1997p).

Visitor capacity in Wawona is not directly managed but is limited through available overnight lodging, camping, and parking areas on park lands. Visitor lodging is also provided on private lands within the river corridor. Continuation of the existing user capacity policies in Wawona could allow for a slight increase in visitor use over the next few decades, which could increase the likelihood of visitor-related damage to traditional cultural resources such as vandalism, erosion, and trampling. The lack of a VERP program would not enable the National Park Service to detect these effects and take management actions. Therefore, the existing user capacity program in Wawona is not expected to have new, short term impacts but could result in local, long-term, minor, adverse impacts to traditional cultural resources.

Summary of Alternative 1 Impacts. Compliance with existing park policies, including the 1999 Programmatic Agreement; the 1997 Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities; and federal regulations such as the National Historic Preservation Act, American Indian Religious Freedom Act, and Native American Graves Protection and Repatriation Act would help ensure that the cultural ORVs in each river segment are being protected and enhanced.

Alternative 1 would continue existing user capacity programs for areas within the Merced River corridor. User capacity is managed through trailhead quotas in wilderness areas and primarily through facility-based capacities in most other areas. Continuation of these existing user capacity programs is not expected to result in any changes to traditional cultural resources in the short term. In the long term, Alternative 1 is expected to result a local, long-term, minor, adverse impact to traditional cultural resources due to the increased likelihood of visitor-related damage to these resources and the increased likelihood of development outside of the El Portal river corridor boundary.

Cumulative Impacts

Cumulative effects on traditional cultural resources are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region. The projects identified below include only those projects that could affect traditional cultural resources within the river corridor or in the park vicinity.

Past Actions. Traditional cultural resources have been lost or damaged in Yosemite National Park through past development, visitor use, natural events, and widespread disruption of cultural traditions. Nevertheless, Yosemite retains many sites and resources of significance to local and culturally associated American Indians.

In general, traditional cultural resources within the Merced River corridor are the result of thousands of years of human occupation. Development of facilities within the river corridor has disturbed or destroyed numerous traditional cultural resources and compromised the integrity of numerous other such resources.

The Cascades Diversion Dam Removal project is a recent park project that benefited traditional cultural resources within the river corridor by restoring the river and its banks back to a more natural state and allowing native vegetation to repopulate the banks.

The *Yosemite Valley Plan*, completed in 2000, calls for projects that will have both adverse and beneficial effects on traditional cultural resources by damaging gathering areas and historic villages or restricting access to traditional use places, and by beneficially affecting traditional cultural resources by restoring native plant habitat.

Present Actions. Projects currently underway that will improve traditional cultural resources in the long term include the Cook's Meadow Ecological Restoration, Parkwide Invasive Plant Management Plan. These two projects benefit native plant communities through restoration, improved site development, or ecosystem planning. Traditional gathering areas are positively affected in the long term by these projects.

The Lower Yosemite Fall Project and the South Fork Merced River Bridge Replacement adversely affect traditional cultural resources in the short term during construction. The Lower Yosemite Fall Project site design will continue to adversely affect traditional cultural properties in the long term. Potential adverse affects from the Utilities Master Plan/East Yosemite Valley Utilities Improvement Plan on traditional cultural resources are being mitigated by salvaging and reusing sod, resulting in no permanent damage.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into three general categories: (1) projects that could adversely affect traditional cultural resources; (2) projects that could beneficially affect traditional cultural resources; and (3) projects that could either adversely or beneficially affect traditional cultural resources. Examples of projects that could have a cumulative, adverse effect on traditional cultural resources include:

- Curry Village and East Yosemite Valley Campgrounds Improvements
- Wawona Campground Rehabilitation
- El Portal Road Improvements Project (Segment D)

These three projects could adversely affect traditional cultural resources by damaging gathering areas and historic villages or restricting access to traditional use places. These projects could have long-term, adverse impacts on traditional cultural resources. The intensity of this impact would depend on the extent to which gathering sites were damaged and access to traditional use places was restricted.

Examples of projects that could have a cumulative, beneficial effect on traditional cultural resources include:

- Yosemite Lodge Area Redevelopment
- Indian Cultural Center
- Visitor Use and Floodplain Restoration Program
- El Portal Old Wastewater Treatment Facility Removal

The removal of the wastewater treatment facility at El Portal would benefit traditional cultural resources by restoring the area to a more natural state. The Yosemite Lodge project could benefit traditional cultural resources through sensitive site design. The Indian Cultural Center will provide a place and facilities for the local American Indian community to assemble in their ancestral land (Yosemite Valley).

Examples of projects that could have adverse and beneficial effects on traditional cultural resources include:

- El Portal Concept Plan
- Tuolumne Meadows Concept Plan

The El Portal Concept Plan and the Tuolumne Meadows Concept Plan could adversely affect traditional cultural resources by damaging gathering areas and historic villages or restricting access to traditional use places, and could beneficially affect traditional cultural resources by restoring native plant habitat.

The cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor, beneficial impact on traditional cultural resources because the long-term, beneficial impacts associated with the management of natural resources and river processes in the vicinity of the Merced River corridor would be partially offset by the short- and long-term, adverse impacts associated with damaging gathering areas or restricting access to traditional use places.

Overall, these cumulative actions in combination with Alternative 1 could have a net long-term, minor, beneficial impact on traditional cultural resources within the Merced River corridor. They could also result in a long-term, minor, adverse impact due to increased development and visitor-related damage.

Impairment

Alternative 1 could result in local, long-term, minor, adverse effects on traditional cultural resources. Therefore, this alternative is not expected to impair the park's traditional cultural resources for future generations.

National Historic Preservation Act Section 106 Summary

Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in no adverse effect to historic properties listed in or eligible for listing in the National Register of Historic Places, because the plan does not prescribe specific action. Future actions that are allowed under the proposed alternative would undergo environmental review to determine potential effects on historic properties.

Historic Sites, Structures, and Landscapes

Analysis

The following discussion provides an overview of the types of impacts to historical sites, structures, and landscapes that could occur within each segment of the Merced River corridor from implementation of the park's user capacity management program without the VERP program. Effects on these resources due to the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Historic sites, structures, and landscapes in the wilderness include the Merced Lake High Sierra Camp, John Muir trail, remains of the original Yosemite Grant boundary fence, U.S. Cavalry trails, and sites associated with early stock grazing.

User capacity within wilderness areas of Yosemite National Park is addressed through trailhead quotas and monitoring of wilderness resource conditions under the Wilderness Impact Management System. In Alternative 1, management of the wilderness areas would continue under the existing trailhead quota system and WIMS.

The wilderness trailhead quotas have been in place for decades, and do not directly affect historic sites, structures, and landscapes. Because there is unused capacity under the trailhead quota system, some additional demand can be accommodated. The addition of more visitors in the wilderness could have a local, long-term, minor, adverse impact on historic sites, structures, and landscapes due to the increased likelihood of visitor-related damage such as surface collection, vandalism, erosion, and trampling.

Impacts in Yosemite Valley. Historic sites, structures, and landscapes in Yosemite Valley include the Yosemite Valley Historic District, which consists of historic bridges, a campground, orchards, trails, roads, residences, administrative facilities, and visitor accommodations. This district includes the Yosemite Village Historic District and the Curry Village Historic District. The Valley also contains several National Register-eligible or -nominated historic buildings and three National Historic Landmarks: the LeConte Memorial Lodge, the Ranger's Club, and The Ahwahnee.

Under Alternative 1, there would be no change to historic sites, structures, and landscapes in the Valley in the short term because visitor use levels would remain similar to current levels. In the long term, there could be local, minor, adverse effects related to increased visitor use and a corresponding increase in visitor-related damage, such as vandalism, surface collection, erosion, and trampling.

Impacts in the Gorge. Historic sites, structures, and landscapes in the Gorge segment include the Merced Canyon Travel Corridor and the powerhouse associated with the Yosemite Valley Hydroelectric Power Plant.

Under Alternative 1, user capacity would continue to be restricted by the existing level of parking in the Gorge. The current parking capacity would allow for some additional use during the nonpeak season. During peak periods when restricted access is implemented for Yosemite Valley, parking areas in the Gorge become more congested. The existing limits on available parking in the Gorge are expected to limit use levels of this area to the current peak level. Since use levels in the Gorge are relatively low and access is limited by available parking, Alternative 1 is not expected to have any effect on historic resources for the segment in the long or short term.

Impacts in El Portal. Historic sites, structures, and landscapes in the El Portal segment consist of the Old El Portal cultural landscape, the Murchison (National Lead Company) structures, railroad houses, the chapel, the old store, the El Portal Market, the old hotel (Yosemite Institute administrative offices), Bagby Station, and other sites and structures related to early industry, homesteading, and tourism in the Merced River corridor. Some of these structures are privately owned or used only as National Park Service or park partner's administrative facilities. Because these structures are not open to the public, they are unlikely to experience adverse effects from visitor use.

The boundary for the El Portal segment of the river in this alternative is based on the 100-year floodplain or the River Protection Overlay, whichever is greater. The zoning proposed for the El Portal corridor under Alternative 1 calls for primarily Park Operations and Administration (3C) in existing developed areas north and south of the river, and primarily Day Use (2C) for undeveloped areas directly adjacent to the river. Although this zoning designation might allow for future development of visitor facilities, much of the 2C is within the River Protection Overlay and is unlikely to be developed. The areas zoned 3C south and north of the river have the potential to be developed as administrative facilities. These areas contain historic sites, structures, and/or landscapes and, if developed further, have the potential to adversely affect these resources. The potential actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement. Therefore the adverse effects of new development would likely be local, long term, and minor to moderate.

Because the boundary in Alternative 1 is smaller than under the three action alternatives, fewer historic sites, structures, and landscapes fall within the river corridor boundary. Although all ORVs are protected regardless of whether they fall within or outside of the boundary, the resources within the boundary would likely receive greater protection due to the stringent requirements of the existing Merced River Plan elements and the Wild and Scenic Rivers Act. The smaller boundary in Alternative 1 could result in a local, long-term, minor to moderate, adverse effect to historic sites, structures, and landscapes.

User capacity within El Portal is currently managed via parking capacity in the area. Continuation of the existing user capacity program in the El Portal segment would not change the visitor facilities available on adjacent private lands, the lack of visitor facilities on park lands, or the amount of informal parking available. Therefore, the existing user capacity program is not expected to result in any changes to historic resources in El Portal.

Alternative 1 would allow for an increase in employee housing in El Portal, which could substantially increase the population of El Portal and require new development within the El Portal Cultural Landscape. This new development will comply with the proposed El Portal design guidelines, and any treatment of the cultural landscape would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement. The adverse effects of new development would likely be local, long term, and minor to moderate.

Overall, Alternative 1 is expected to result in long-term, minor to moderate, adverse effects on historic resources within the El Portal segment of the river corridor.

Impacts in Wawona. Historic sites, structures, and landscapes in Wawona include the Washburn cultural landscape, the Chowchilla Mountain Road, Civilian Conservation Corps structures, the Wawona Covered Bridge, the Wawona Hotel (a National Historic Landmark), and the Pioneer Yosemite History Center. Many relocated and individually listed National Register historic structures comprise the Pioneer Yosemite History Center.

Visitor capacity in Wawona is not actively managed but is limited through available overnight lodging and parking areas on park lands. Visitor lodging is also provided on private lands within the river corridor. Continuation of the existing user capacity policies in Wawona could allow for a slight increase in visitor use over the next few decades, which could increase the likelihood of visitor-related damage to historic sites, structures, and landscapes such as vandalism, erosion, and trampling. Therefore, the existing user capacity program in Wawona could result in local, long-term, minor, adverse impacts to these resources.

Summary of Alternative 1 Impacts. Compliance with existing park policies, including the 1999 Programmatic Agreement, Yosemite National Park Design Guidelines, and federal regulations such as the National Historic Preservation Act, would help ensure that the cultural ORVs in each river segment are being protected and enhanced.

Alternative 1 would continue existing user capacity programs for areas within the Merced River corridor. User capacity is managed through trailhead quotas in wilderness areas and primarily through facility-based capacities in most other areas. Continuation of the existing user capacity programs is not expected to result in any changes to historic resources in the short term. In the long term, Alternative 1 is expected to result a local, minor, adverse impact to some historic sites, structures, and landscapes due to increased likelihood of visitor-related damage to these resources and the increased likelihood of development outside of the El Portal river boundary. Other historic resources in El Portal are no affected by visitor use. These include the Murchison structures, the Yosemite Institute administrative offices, Bagby Station, the El Portal railroad houses, the El Portal chapel, and the old store in El Portal.

Cumulative Impacts

Cumulative effects on cultural resources as they relate to historic sites, structures, and landscapes are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region. The projects identified below include only those projects that could affect historic sites, structures, and landscapes within the river corridor or in the park vicinity.

Past Actions. Past development, visitor use, and natural events have destroyed or damaged historic sites, structures, and landscapes. In wilderness areas, historical landscape resources include remnants of early stock grazing, trails, and work camps. In Yosemite Valley, Wawona, and El Portal, cultural landscape resources include early hotels, bridges, stores, studios, cabins, farms, and railroad structures that were associated with early Euro-American pioneer settlement and industries. In the Merced River gorge, cultural landscape resources include segments of the early wagon road and engineering projects. Rapidly disappearing structures and sites in other areas include homestead cabins, barns, road and trail segments, bridges, mining complexes, railroad and logging facilities, blazes, and campsites. These resources are reminders of the area's ranching, grazing, lumbering, and mining history.

Past park projects that adversely affected historic sites, structures, and landscapes within the river corridor include:

- Cascades Diversion Dam Removal
- Cascades Housing Removal

Both of these river restoration projects required removal of historic structures that were contributing elements to the Yosemite Valley Hydroelectric System, a National Register-nominated property. The removal of these structures resulted in long-term, moderate, adverse impacts.

Every year, the park's historic preservation crew restores or rehabilitates historic structures throughout the front country and wilderness, beneficially affecting these resources in the long term. Most recently, the crew completed the restoration of the covered bridge in Wawona.

The implementation of projects outlined in the *Yosemite Valley Plan* may have adverse and beneficial impacts on historic sites, structures, and landscapes. The plan prescribed the removal or benign neglect of some resources, resulting in a long-term, moderate, adverse effect. The plan may require removal of historic orchards and bridges that could be eligible for listing on the National Register or as contributing elements to a National Register historic district. Additionally, these plans could add noncontributing elements to historic landscapes. Conversely, the plan also prescribed management actions to treat historic sites, structures, and landscapes.

Present Actions. Projects currently underway that adversely affect historic sites, structures, or landscapes include the Cook's Meadow Ecological Restoration, which necessitated the removal of a historic road, and the Lower Yosemite Fall Project, which benefited the Yosemite Valley historic landscape through improved site design that complements existing significant historic landscape characteristics.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into two general categories: (1) projects anticipated to have a net adverse effect; and (2) projects anticipated to have adverse and beneficial effects to historic sites, structures, and landscapes.

Projects anticipated to have a net adverse effect include:

- Yosemite Village Interim Parking Improvements
- El Portal Road Improvements Project (Segment D)
- Indian Cultural Center
- Wawona Campground Rehabilitation
- Environmental Education Campus Development Program

These projects require new development that will likely have a negligible to minor impact on historic sites, structures, or landscapes within Yosemite Valley. Yosemite Village Interim Parking Improvements will alter historically significant circulation routes, the El Portal Road Improvements Project will possibly alter dimensions or materials of this historic road, and the Indian Cultural Center will add structures to a currently undeveloped portion of the Yosemite Valley Historic District. The Environmental Education Campus Development Program will require the redevelopment of historic structures and landscapes.

Projects anticipated to have adverse and beneficial effects include:

- El Portal Concept Plan
- Tuolumne Meadows Concept Plan
- The Tuolumne River Wild and Scenic River Comprehensive Management Plan

Each of these plans could prescribe removal or benign neglect of historic sites, structures, and landscapes, resulting in a long-term, moderate, adverse effect. Additionally these plans could add noncontributing elements to historic landscapes.

Conversely, each of these plans could prescribe management actions to protect historic sites, structures, and landscapes, resulting in a local, long-term, moderate, beneficial impact. The overall impact intensity of any planning project would depend on the extent to which the plan's recommendations were implemented.

The cumulative projects would have a long-term, moderate, adverse impact on historic sites, structures, and landscapes because these projects would, individually and in combination, disrupt historical circulation and land use patterns, add noncontributing elements to the cultural landscape, or result in the removal of historic fabric or resources. The intensity of the overall impact would depend on the degree of the impacts associated with the individual projects that would affect cultural landscape resources.

Overall, these cumulative actions in combination with Alternative 1 could have a net long-term, moderate, adverse impact on historic sites, structures, and landscapes within the Merced River corridor.

Impairment

Impacts associated with Alternative 1 are not expected to impair the park's historic sites, structures, and landscapes for future generations.

National Historic Preservation Act Section 106 Summary

Under the 1999 Programmatic Agreement and the regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in no adverse effect to historic properties listed in or eligible for listing in the National Register of Historic Places.

Visitor Experience

Analysis

The following discussion provides an overview of the types of impacts to recreation, interpretation and orientation, visitor services, and wilderness experience that could occur within each segment of the Merced River corridor under the No Action Alternative. Effects on visitor experience from the proposed corridor boundary and zoning in El Portal are also addressed in the El Portal segment discussion.

Recreation

Analysis

The following discussion provides an overview of the types of impacts to recreational resources and the recreation ORVs that could occur within each segment of the Merced River corridor from implementation of existing user capacity policies. Effects on recreation from the proposed corridor boundaries and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Recreation ORVs in the Wilderness segment include outstanding opportunities for solitude along the river, primitive and unconfined recreation, and recreational opportunities such as day hiking, backpacking, horseback riding and packing, camping, and the enjoyment of natural river sounds.

User capacity within wilderness areas of Yosemite National Park is currently addressed primarily through trailhead quotas for overnight visitors, monitoring of wilderness resource conditions under the Wilderness Impacts Monitoring System, and management zoning of the Wilderness areas, which calls for very low levels of facility development and visitor use in wilderness areas. There are currently no restrictions on day use within wilderness areas. Because most Wilderness trails receive relatively low levels of use, and because day use by hikers causes few impacts, quotas have not been needed. Under Alternative 1, wilderness areas would continue to be managed in this manner.

The existing wilderness trailhead quotas have been in place for decades, and in general seem to provide sufficient access for people desiring overnight wilderness access, while providing for the solitude desired from a wilderness experience and protection of natural, cultural, and wilderness resources. Although park visitation is expected to increase through 2020 under Alternative 1, there is currently some unused capacity within the Wilderness Trailhead Quota System. Wilderness overnight visitation numbers are down from the levels of the 1980s, but use has begun increasing again in recent years. Thus, most visitors who want to access the Wilderness can, although they may not be able to obtain a permit for their preferred destination.

Under Alternative 1, numbers of day visitors in wilderness areas would be expected to continue to increase in areas accessible from the Valley, such as Little Yosemite Valley. The increase in use in these areas could result in local, long-term, minor to moderate, adverse effects on recreation and the recreation ORVs, due to decreased opportunities for solitude.

Alternative 1 is not expected to result in any substantive change in access to day use or overnight recreation opportunities in wilderness areas. Alternative 1 would be expected to have a local, long-term, minor to moderate, adverse effect on recreation and the recreation ORVs in those areas affected by day visitors. Otherwise, Alternative 1 would not affect recreation in wilderness areas and the spectrum of recreational opportunities encompassed in the recreation ORV would continue to be protected and enhanced.

Impacts in Yosemite Valley. The recreation ORVs in Yosemite Valley include opportunities to experience a spectrum of river-related recreational activities, from nature study and sightseeing to hiking.

Visitor capacity in the Valley is not actively managed on a daily basis, but is regulated through facility capacities (primarily related to overnight accommodations, parking, and utilities), management zoning (which provides guidance on facility development and visitor use levels), and other use limits implemented through the Superintendent's Compendium or other policies. These existing policies, particularly the limits on overnight use and facilities, indirectly limit the number of visitors to the Valley. Current management practices sometimes result in significant traffic on peak summer weekends and holidays, as visitors circle through the Valley looking for parking. Park management sometimes implements restricted access policies to manage traffic into Yosemite Valley. These are implemented when traffic congestion is creating unacceptable human safety and resource impacts. Visitor surveys over the years have indicated that traffic congestion and parking are two of the main factors that adversely affect visitor experience in the Valley (Gramann 1992; ORCA 2000; Manning et al. 1999a, b).

In the short term, the continuation of existing policies under the No Action Alternative would not be expected to affect visitor access to recreational opportunities. As park visitation increases through 2020, the limitations on parking and lodging in the Valley would limit the number of visitors who can access the many recreation activities within the Valley during peak periods. In the long term, assuming no increase in overnight accommodations or day-visitor parking in the Valley, there would likely be more days when potential day visitors could not find parking in the Valley, were subject to restricted access controls in trying to reach the Valley, or perceived adverse effects to their experience related to traffic congestion and crowding. These adverse effects would likely occur only during peak periods, reducing the overall effect on recreation to a local, long-term, minor to moderate, adverse effect.

Impacts in the Gorge. The recreation ORVs for the Gorge segment of the river corridor are related to the opportunities for a spectrum of recreational opportunities, such as picnicking, fishing, photography, and sightseeing. Access to the gorge is limited by available parking along Highway 140 and at two off-road parking areas. User capacity for the gorge is currently managed through parking access.

Under Alternative 1, user capacity would continue to be limited primarily through the existing level of parking in the gorge. It is likely that the existing parking capacity would allow for some additional use during non-peak seasons. During peak periods and when restricted access is implemented for Yosemite Valley, parking areas in the gorge become more congested. The existing limits on available parking in the gorge would be expected to limit peak uses of this area to the current peak level of use. Increased visitation could result in reaching this peak on more days, but would likely be limited to peak periods. Since use levels in the gorge are relatively low and access is limited by available parking, the overall effect of Alternative 1 on access to recreation activities in the gorge, the quality of recreation experiences, and the recreation ORVs in the long term is expected to be local, negligible to minor, and adverse.

Impacts in El Portal. The recreation ORVs for El Portal are related to a range of river-related activities, and in particular whitewater rafting and kayaking. In addition, fishing is noted in the ORVs and this segment of the Merced River is the only segment classified as a Wild Trout Fishery. There are no established visitor facilities on National Park Service lands in this segment, although commercial rafting operations use an existing raft launch at the western edge of the segment and there are many informal parking areas along Highway 140.

The boundary for the El Portal segment of the river in Alternative 1 is based upon the 100-year floodplain or the River Protection Overlay, whichever is greater. The management zoning for the El Portal corridor under Alternative 1 calls for park administrative uses (3C) in existing developed areas north and south of the river, and day use (2C) for undeveloped areas directly adjacent to the river. This narrow boundary would allow for some additional development outside the river corridor boundary. Within the corridor, the areas zoned 3C have the potential to be developed as administrative facilities, but only if these facilities can meet the Merced River Plan criteria for construction within the river corridor (protection of the ORVs). The areas zoned for day use would also allow for some future development of visitor facilities inside the corridor; however, much of the area zoned 2C is within the River Protection Overlay and is unlikely to be developed. Development of additional administrative facilities north of the river would not adversely affect the access to or opportunities for recreation activities, since these potential development areas are not currently used for recreation access. Since there are no existing visitor facilities on National Park Service lands, visitor use within the corridor is limited, and most of the recreation in this area is concentrated in and near the river, the proposed boundary and management zoning would likely have a long-term, local, negligible, adverse effect on access to recreation, the quality of the visitor experience, and the recreation ORVs within this segment.

Visitor capacity within El Portal is currently managed primarily by the parking capacity, the lack of visitor facilities on National Park Service lands, and existing agreements with the Bureau of Land Management on commercial rafting operations. Continuation of the existing user capacity program in the El Portal segment would not change the visitor facilities available on adjacent private lands, the lack of existing visitor facilities on park lands, the amount of parking available, or the access to the spectrum of recreational opportunities included in the recreation ORVs. Therefore, the user capacity program for Alternative 1 would not be expected to result in any short-term or long-term effect on recreation. .

Impacts in Wawona. The recreation ORVs for Wawona relate to the spectrum of river-related recreational activities available, from nature study to photography to hiking. Below Wawona, the recreation ORVs are related to outstanding opportunities for river-related solitude, enjoyment of natural river sounds, and primitive and unconfined recreation in an untrailed, undisturbed environment. River-related recreational opportunities within this area include hiking, fishing, and whitewater kayaking. There is no recreation ORV for the Wawona Impoundment segment.

Visitor capacity in Wawona is not actively managed on a daily basis, but is limited through the availability of overnight lodging and day-visitor parking areas on National Park Service lands. Demand for day-visitor parking currently exceeds the supply on peak summer days, resulting in traffic congestion. Continuation of the current user capacity policies in Wawona would not result in any changes in the short term. If visitation increases in the long term, parking demand could exceed supply on more days. The spectrum of recreational opportunities would be maintained under this alternative, but visitors unable to find parking would not be able to access the recreational opportunities on those peak days. Therefore, the effects of Alternative 1 on access to recreation activities, the quality of the visitor experience, and the recreation ORVs in Wawona would be expected to be a local, long-term, minor, adverse effect.

Summary of Alternative 1 Impacts. Alternative 1 would continue existing user capacity programs for areas within the Merced River corridor. User capacity would continue to be managed through trailhead quotas in wilderness areas, and primarily through facility-based capacities in most other areas. Continuation of these existing user capacity programs would not be expected to result in any changes to recreational access, the quality of the visitor experience, or the recreation ORVs in the short term. In the long term, Alternative 1 could result in local, long-term, minor to moderate, adverse effects on access to recreational activities, the quality of visitor experience, and recreation ORVs in the developed areas of the river corridor, primarily related to traffic congestion and access to parking. The spectrum of recreational opportunities would be maintained under this alternative, but visitors unable to find parking would not be able to access the recreational opportunities on those peak days. Therefore, Alternative 1 would be expected to protect and enhance the recreation ORVs for each segment of the river.

Cumulative Impacts

Cumulative impacts on visitor experience as it relates to recreation are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of this alternative. The projects identified include only those that could affect visitor experience within the river corridor or in the park.

Past Actions. Past actions have had both beneficial and adverse effects on recreation. The El Portal Road Improvements Project, Segments A, B and C, had a short-term, adverse effect on visitor access during construction, including delays and closure of the area to recreational use. The project had long-term beneficial effects related to improved access to recreational opportunities along the river corridor and the El Portal Road, and easier, more dependable, and safer access for recreational vehicles, buses, and other vehicles to Yosemite Valley and other park destinations. Overall, this project provided increased access for visitors to the park and expanded recreational opportunities in the vicinity of the park, resulting in a beneficial effect. The Rehabilitate Yosemite Valley Campground Restrooms project had a beneficial effect by improving the quality of visitor facilities in Yosemite Valley.

Projects implemented under the *Yosemite Valley Plan* could alternately enhance or degrade the quality of the visitor experience in Yosemite Valley. The plan prescribed projects that result in short-term construction effects on access to recreation opportunities, the removal of some existing recreational facilities, and potential limitations on the ability to access Valley destinations by private vehicles. The plan also provides for improvements to the natural environment, reductions in traffic congestion and crowding, and improved visitor facilities in the long term.

Present Actions. Current projects underway include Happy Isles to Vernal Fall Trail Reconstruction, Lower Yosemite Fall Project, Yosemite Motels Expansion, and Yosemite Valley Shuttle Bus Stop Improvements. These projects could result in short-term adverse effects on visitor access to recreation opportunities during construction activities. In the long term, these projects would be expected to have local, beneficial effects on recreation by providing new or improved trails, increasing overnight lodging close to recreation opportunities, and by providing for improved shuttle bus stops for visitors to Yosemite Valley.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into two general categories: (1) projects anticipated to have a net beneficial effect and (2) projects anticipated to have both adverse and beneficial effects.

Examples of future projects that could have a net, beneficial effect on regional visitor experience as it relates to recreation include:

- Curry Village and East Yosemite Valley Campgrounds Improvements
- Multi-Use Trail to West Yosemite Valley
- Red Peak Pass Trail Rehabilitation
- Wawona Campground Rehabilitation
- Yosemite Lodge Area Redevelopment

These projects would improve existing recreation facilities or develop new recreation facilities, increasing recreation opportunities and the quality of the visitor experience.

Reasonably foreseeable future projects that could have both adverse and beneficial impacts include:

- Update to the *Yosemite Wilderness Management Plan*
- El Portal Road Improvements Project (Segment D)
- Yosemite Village Interim Parking Improvements

These projects have the potential to enhance the quality of the visitor experience in the Wilderness and Yosemite Valley, but could also result in short-term construction effects on access to recreation opportunities and the removal of some existing recreational facilities. For example, the update to the *Yosemite Wilderness Management Plan* could call for additional restrictions on facilities and activities in wilderness areas. This change could be considered a local, long-term, adverse impact to some users, due to the potential restrictions. This action could also result in a beneficial effect for other user groups whose access to the wilderness would not be affected, but who would benefit from a reduction in facilities and activities and their associated impacts in wilderness areas, and improvements in opportunities for solitude and a primitive and unconfined recreational experience. El Portal Road Improvements Project (Segment D) and the Yosemite Village Interim Parking Improvements would improve traffic circulation and parking in Yosemite Valley, improving visitor access to recreation opportunities.

The past, present, and foreseeable future projects would have a long-term, negligible to minor, beneficial impact, because the beneficial impacts associated with increased visitor access and expanded recreational opportunities would be partially offset by the adverse impacts associated with construction activities and the potential removal of specific recreational opportunities.

Overall, Alternative 1 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a local, long-term, negligible, beneficial cumulative impact on recreation, because an increase in visitor access and an expansion of recreational opportunities would be partially offset by the removal of specific recreational opportunities, and increased congestion in developed areas of the river corridor.

Interpretation and Orientation

Analysis

The following discussion provides an overview of the impacts to interpretation and orientation that could occur within each segment of the Merced River corridor under Alternative 1. Effects on interpretation and orientation from the proposed corridor boundaries and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Under Alternative 1, user capacity in wilderness areas would continue to be managed under the existing Wilderness Trailhead Quota System, and other relevant park policies. This would not be expected to result in any effect on the existing level of interpretive programs in the Wilderness, such as ranger talks at Little Yosemite Valley Backpackers Campground or ranger-led loop hikes.

Impacts in Yosemite Valley. Under Alternative 1, user capacity in Yosemite Valley would continue to be managed primarily through limitations on overnight and day-use parking facilities, as well as other relevant park policies. Continuation of the existing user capacity program in Yosemite Valley would not be expected to affect the availability and diversity of interpretation, orientation, education, and information services within the corridor.

Impacts in the Gorge. No interpretive programs are currently offered in the Gorge segment. Alternative 1 would have no impact on interpretation and orientation for the gorge.

Impacts in El Portal. Under Alternative 1, the proposed corridor boundary and management zoning reflect the El Portal segment's current and planned use as primarily an administrative center. The proposed corridor boundary, zoning configuration, and user capacity programs would not impact existing interpretation and orientation opportunities in El Portal.

Impacts in Wawona. Under Alternative 1, visitor capacity in Wawona would continue to be controlled primarily through limitations on overnight and day-use parking facilities, as well as other relevant park policies. Continuation of existing user capacity management policies for Wawona would not affect interpretive programs provided at the Wawona Campground Amphitheater, the Pioneer Yosemite History Center in Wawona, or other areas.

Summary of Alternative 1 Impacts. Existing park user capacity management programs for the Merced River corridor are primarily based upon wilderness trailhead quotas and existing facility capacity limits, as well as other management policies as described in Chapter II. Continuation of current user capacity management policies would not be expected to affect access to or the diversity of interpretation and orientation programs offered throughout the corridor.

Cumulative Impacts

Cumulative effects on visitor experience as it relates to orientation and interpretation are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of this alternative. The projects identified below include only those projects that could affect visitor interpretation and orientation within the river corridor or in the park vicinity.

Past Actions. Past park projects that affected visitor interpretation and orientation within the river corridor include the Happy Isles Fen Habitat Restoration and the Merced River Ecological Restoration at Eagle Creek. These projects included interpretative signs and facilities to provide information regarding natural systems in the park, resulting in a beneficial effect on interpretation in the river corridor.

Present Actions. Projects currently underway that provide more opportunities for interpretive and orientation include the Cook's Meadow Ecological Restoration and the Lower Yosemite Fall Project. The Yosemite Valley Bus Stop Improvements would also result in a beneficial effect on visitor experience related to increased orientation and interpretation.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into two general categories: (1) projects anticipated to have a net beneficial effect; and (2) projects anticipated to have both a beneficial and an adverse effect.

Examples of projects that could have a cumulative, beneficial effect on visitor experience as it relates to orientation and interpretation include:

- Yosemite Village Interim Parking Improvements
- Indian Cultural Center

These projects could enhance the quality of the visitor experience by increasing interpretation and orientation facilities and services in Yosemite Valley.

Reasonably foreseeable projects that could have both a beneficial and adverse effect include:

- Update to the *Yosemite Wilderness Management Plan*

This planning effort could result in increased restrictions in wilderness areas that could affect existing facilities or uses, resulting in an adverse effect on users that currently use these facilities. On the other hand, this could result in a beneficial effect for other user groups who would benefit from a reduction in facilities in the wilderness and enhanced opportunities for solitude and self-guided interpretive experiences.

The past, present, and reasonably foreseeable future projects would have a long-term, minor, beneficial impact, because the beneficial impacts associated with an increase in interpretation and orientation programs and services would only be partially offset by the potential for decreased programs in wilderness areas.

Alternative 1 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a local, long-term, minor, beneficial cumulative impact because the availability and diversity of interpretation and orientation programs and services in the corridor would increase.

Visitor Services

Analysis

The following discussion provides an overview of the types of impacts to visitor services that could occur within each segment of the Merced River corridor under the No Action Alternative. Effects on visitor services from the proposed corridor boundary and management zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Under Alternative 1, wilderness areas would continue to be managed under existing wilderness trailhead quotas and other current management policies. Continuation of these policies would not affect the existing low level of visitor services in the Wilderness.

Impacts in Yosemite Valley. Visitor services within the Valley include lodging, food service, and concession-managed activities such as tours and raft rentals. Under Alternative 1, visitor capacity in Yosemite Valley would continue to be managed under existing user capacity policies, including facility limits and specific activity limits. This would not be expected to affect the level of visitor services provided in the Valley, or access to these services. Visitor capacity would continued to be managed primarily through limits on the number of rooms and campsites available for overnight guests, as well as the parking available for day visitors to the Valley. Alternative 1 would not be expected to result in any impacts on the availability of visitor services in the short term. If overnight accommodations and other visitor services are held at existing levels in the future, increased demand for overnight accommodations and other services could result in local, long-term, minor, adverse effects on visitor experience related to access to and availability of visitor services in Yosemite Valley.

Impacts in the Gorge. No visitor services are currently offered in the Gorge segment of the corridor, and continuation of existing user capacity management policies under Alternative 1 would have no effect on visitor services.

Impacts in El Portal. The proposed El Portal segment boundary and management zoning, which focuses on the area's designation as an administrative and operations center, would not be expected to result in any change in the limited visitor services available in El Portal. Visitor services in El Portal are largely run by private businesses (e.g., lodging, restaurants, etc.) on private lands that are not managed under park management policies. The proposed river boundary, zoning, and continuation of existing user capacity management policies under Alternative 1 would not affect visitor services in this area.

Impacts in Wawona. Visitor services in Wawona include lodging, food service, and activities such as horseback riding, golfing, and interpretative programs at the Pioneer Yosemite History Center. Under Alternative 1, the continuation of existing user capacity management policies in Wawona would not affect the level of visitor services provided in the Wawona segments, or access to these services in the short term. If overnight accommodations and other visitor services are held at existing levels in the future, increased demand for overnight accommodations and other services could result in local, long-term, minor, adverse effects on visitor experience related to access to and availability of visitor services in Wawona.

Summary of Alternative 1 Impacts. Continuation of existing user capacity program policies within the Merced River corridor would not be expected to result in any effects on access to or the availability of visitor services in the short term. If overnight accommodations and other visitor services are held at existing levels in the future, increased demand for overnight accommodations and other services could result in local, long-term, minor, adverse effects on visitor experience related to access to and availability of visitor services in Yosemite Valley and Wawona.

Cumulative Impacts

Cumulative effects on visitor experience as it relates to visitor services are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of Alternative 1. The projects identified below include only those projects that could affect visitor experience within the river corridor or in the park vicinity.

Past Actions. The El Portal Road Improvements Project, Segments A, B, and C improved transportation to and from the park, which had a beneficial effect on visitor services by providing increased access for visitors staying outside the park. The Rehabilitate Yosemite Valley Campground Restrooms also had a beneficial effect on visitor services by improving the quality of existing visitor facilities.

Implementation of projects prescribed in the *Yosemite Valley Plan* will have a mixed effect on visitor services. The plan proposes restoration of degraded areas and a reduction of development within the Merced River ecosystem while enhancing the quality of the visitor experience in Yosemite Valley. Reducing automobile congestion, limiting crowding, and expanding orientation and interpretation services may improve visitor services. The plan does, however, prescribe an overall reduction in overnight accommodations in Yosemite Valley, which would have an adverse effect on the provision of visitor services.

Present Actions. Projects currently underway that have a beneficial effect on visitor services include the Yosemite Motels Expansion, the Yosemite Valley Shuttle Bus Stop Improvements, and the Lower Yosemite Fall Project. These projects provide for additional accommodations close to the park and improve visitor facilities in the Yosemite Valley area.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into two general categories: (1) projects anticipated to have a net beneficial effect; and (2) projects anticipated to have a net adverse effect.

Examples of projects that could have a cumulative beneficial effect on visitor services include:

- Curry Village and East Yosemite Valley Campgrounds Improvements
- Wawona Campground Rehabilitation
- Yosemite Lodge Area Redevelopment
- Yosemite Village Interim Parking Improvements

These projects are expected to improve and expand campgrounds and campground facilities, improve overnight accommodations and other services at the Yosemite Lodge, and improve parking and traffic circulation for visitors to Yosemite Valley.

A reasonably foreseeable project that could have a net adverse effect on visitor services is the Update to the *Yosemite Wilderness Management Plan*, which could call for reductions in the level of facilities and activities in wilderness areas. This could change the level of overnight accommodations in wilderness areas, which could be considered an adverse effect on visitor services.

These cumulative projects would have a long-term, minor to moderate, adverse impact on visitor services due to the overall reduction of overnight accommodations in Yosemite Valley and the potential reduction in wilderness areas. These adverse impacts would be partially offset by improving parking and traffic circulation in Yosemite Valley, rehabilitating and expanding some campgrounds in the park, and expanding lodging opportunities outside the park.

Alternative 1 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor to moderate, adverse cumulative impact on visitor services because of the potential reduction of overnight accommodations in Yosemite Valley and potential wilderness areas, and the potential for future increased demand for overnight accommodations. This adverse impact would be partially offset by improving parking and traffic circulation within Yosemite Valley, rehabilitating and expanding some campgrounds in the park, and expanding lodging opportunities outside the park.

Wilderness Experience

Analysis

The following discussion provides an overview of the types of impacts to the wilderness experience that could occur within the Merced River corridor under Alternative 1.

Under Alternative 1, the park would continue to manage use of the Wilderness primarily through the existing trailhead quota system, as well as other relevant management policies. Alternative 1 would not result in any change to wilderness access or the opportunities for solitude and primitive recreation.

Summary of Alternative 1 Impacts. There would be no change to the wilderness experience under Alternative 1.

Cumulative Impacts

Cumulative effects on the wilderness experience are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with the effects of this alternative. The projects identified below include only those projects that could affect the wilderness experience within the river corridor or in the park vicinity.

Past Actions. Past restoration and rehabilitation projects in wilderness areas, such as trail maintenance and illegal campsite restoration, improved the wilderness experience by restoring and improving trail conditions and restoring meadow environments near trails. The recently completed *Fire Management Plan* (NPS 2004) is expected to result in local, long-term, beneficial effects on the wilderness experience by improving natural conditions.

Present Actions. The Wilderness Trailhead Quota System continues to limit and/or disperse use based on trailhead access, and thus provides the beneficial impact of improved experience of natural values due to resource protection.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into two general categories: (1) projects anticipated to have a net beneficial effect; and (2) projects anticipated to have both a beneficial and adverse effect.

The Red Peak Pass Trail Rehabilitation could have a net beneficial effect on visitor experience by improving ecosystem health in wilderness areas within the park, restoring meadows, and improving trails. Any improvement to the wilderness ecosystem is considered to be a long-term, beneficial impact.

The update to the *Yosemite Wilderness Management Plan* is expected to have both beneficial and adverse effects. This update could call for a reduction in existing facilities or activities in wilderness areas. This change could reduce overnight accommodations in wilderness areas, resulting in an adverse effect to some visitors. On the other hand, this action might also result in a beneficial effect for other user groups whose access to the wilderness would not be affected, but who would benefit from a reduction in facilities and activities in the wilderness. These individuals could benefit from improvements in scenic and natural quiet qualities, opportunities for solitude, and an overall primitive recreational experience.

These cumulative projects would have a long-term, minor, beneficial impact on the wilderness experience, because the wilderness ecosystem would be improved and would only be partially offset by the potential, long-term, adverse impacts related to additional restrictions on activities and facilities in wilderness areas.

Alternative 1 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor, beneficial cumulative impact to the wilderness experience, because the beneficial improvements to the wilderness ecosystem would offset the potential reductions in wilderness facilities and activities.

Social Resources

Land Use

Analysis

The following discussion provides an overview of the types of impacts to land use that could occur within each segment of the Merced River corridor under the No Action Alternative. The analysis for the El Portal segment also describes the types of impacts to land use that could occur based on implementation of the narrow river corridor boundary and management zoning proposed for El Portal under this alternative.

The park establishes management zoning to classify park areas and prescribe future desired resource conditions, visitor activities and use levels, and appropriate facilities. Management zones in the river corridor were established in the Merced River Plan. These management zones place an emphasis on integrating protection and enhancement of the natural and cultural resources identified as ORVs with the protection and enhancement of the spectrum of recreational experiences identified in the recreation ORVs. Management zoning sets the goals for each area; the park implements user capacity management measures to help achieve the goals set out in the management zoning prescriptions.

Impacts to Wilderness. User capacity measures implemented under Alternative 1, including the existing wilderness trailhead quotas, would be consistent with the management zoning developed in the Merced River Plan and with the existing land uses in the Wilderness segments of the river corridor.

Impacts to Yosemite Valley. User capacity measures implemented under Alternative 1, including facility and specific activity limits, would be consistent with the management zoning developed through the Merced River Plan and with existing land uses in the Yosemite Valley segment.

Impacts to the Gorge. User capacity measures implemented under Alternative 1, including facility and specific activity limits, would be consistent with the management zoning developed through the Merced River Plan and with existing land uses in the Gorge segment.

Impacts in El Portal. Under Alternative 1, the river corridor boundary in the El Portal segment would include 193 acres, of which 137 acres would be zoned for day use (2C) and the other 56 acres would be zoned for administrative uses (3C). The 3C zoning designation would allow for development of some additional park administrative facilities and 2C zoning would allow for development of some day use facilities. Development within the corridor would be limited to facilities that meet the requirements of the Wild and Scenic Rivers Act, including the protection and enhancement of the ORVs. The potential residential and administrative types of development that would likely occur in the future would be consistent with existing development patterns. Areas outside the corridor boundary could also be developed, to the extent that any ORVs located outside the river corridor are protected. The potential for increased development in the El Portal segment, both inside and outside the corridor boundary, would result in more residential and administrative development and less open space. Development would likely increase, resulting in a local, long-term, minor to moderate, adverse effect on land use in El Portal.

User capacity measures implemented under Alternative 1, including facility and specific activity limits, would be consistent with the management zoning established for the El Portal segment under this alternative.

Impacts to Wawona. User capacity measures implemented under Alternative 1, including facility and specific activity limits, would be consistent with the management zoning developed through the Merced River Plan and with existing land uses in Wawona.

Summary of Alternative 1 Impacts. Under Alternative 1, the park would continue to implement existing user capacity policies, including wilderness trailhead quotas, facility limits, and specific activity limits. Since these existing user capacity policies are designed to help the park achieve the goals defined in the management zoning prescriptions, implementation of Alternative 1 would be consistent with management zoning in the river corridor. The proposed river corridor boundary and management zoning in El Portal could result in local, long-term, minor to moderate, adverse effects on land use due to the potential for increased residential and administrative development and a decrease in open space in the El Portal area.

Cumulative Impacts

Cumulative effects to land use are based on an analysis of past, present, and reasonably foreseeable future actions in combination with the potential effects of this alternative. The projects identified below include only those projects that could affect land use within the river corridor and in the immediate vicinity of Yosemite National Park.

Past Actions. In general, land uses in the Merced River corridor have been determined by past decisions on the development, relocation, and removal of specific facilities. Development within the Merced River corridor has occurred since Euro-American occupation.

In 1991, the U.S. Forest Service and the Bureau of Land Management developed a joint *South Fork and Merced Wild and Scenic River Implementation Plan* for the segments of the main stem and South Fork of the Merced River that are under their jurisdiction. The plan is also a general management plan with many prescriptive goals and few specific actions. The plan endeavors to limit or end consumptive uses such as grazing within the river corridor and calls for the formalization of camping and launch facilities for nonmotorized watercraft. By eliminating impacts where feasible (grazing does not currently occur within the river corridor), concentrating impacts in areas able to withstand visitor use, and providing facilities that mitigate adverse effects associated with visitor use (e.g., restrooms), implementation of these actions has a beneficial effect.

The *Yosemite Valley Plan* calls for relocation of facilities out of Yosemite Valley to El Portal and Wawona and for redevelopment of areas within Yosemite Valley. All of the changes proposed are consistent with the types of development already in the river corridor segments and with the land use zoning established in the Merced River Plan. The changes proposed in this plan would result in an adverse effect on existing land use in El Portal and Wawona as open space areas are developed for residential uses and administrative uses. The intensity of the effect would depend upon the extent to which the proposed development in the plan is implemented.

Present Actions. The Mariposa County General Plan Update would evaluate and address countywide land use issues and is expected to benefit land use throughout the county. The Yosemite Motels Expansion project, a privately sponsored project, would be expected to have local, long-term, adverse effects on land use in El Portal associated with the increased intensity of development adjacent to El Portal.

Reasonably Foreseeable Future Actions. The El Portal Concept Plan will evaluate development opportunities and constraints in El Portal and evaluate the potential for relocation of employee housing and other park administrative facilities from the Valley to El Portal. The impact intensity of this project would depend upon the intensity of development proposed and the extent to which the Concept Plan addresses compatibility with existing land uses in El Portal. The long-term impacts on land use could be either adverse or beneficial.

Overall, the cumulative projects would be expected to have local, long-term, minor to moderate, adverse impacts on land use due to the potential for additional development of residential and administrative uses and a decrease in open space in the El Portal area and Wawona areas. The impacts should be offset somewhat by the planning efforts underway on countywide planning and the El Portal Concept Plan.

The cumulative effects of Alternative 1 and the cumulative projects would result in local, long-term, minor to moderate, adverse effects on land use within the river corridor.

Transportation

Analysis

The following discussion provides an overview of the types of transportation impacts associated with Alternative 1, the No Action Alternative. Because transportation services and facilities are not provided in Yosemite wilderness areas, this discussion does not address impacts in the Wilderness segments of the river corridor.

In general, transportation conditions would remain unchanged under Alternative 1, although traffic levels would be expected to increase over time. Traffic levels during peak periods would continue to adversely affect transportation due to congestion on roads and in parking areas. Visitor parking would occasionally spill into natural areas along roadsides, resulting in conflicts among parked and moving vehicles. Pedestrian traffic from roadside parking to activity areas would conflict with moving traffic. The park would continue to occasionally implement restricted access programs in response to traffic and safety conditions. If visitation grows in the future, these impacts would become more frequent and more intense.

Impacts in Yosemite Valley. At present, visitor travel to Yosemite Valley is not actively controlled on a daily basis, but it is regulated through facility capacities. For the transportation system, capacities are primarily determined by the parking supply. Several traffic bottlenecks, where high volumes of pedestrians cross major roadways, affect transportation conditions during peak travel periods. During these peak periods, park staff direct visitors to available parking and manage vehicle and pedestrian traffic at several congested intersections. Park employees direct visitors to roadside parking areas when parking lots are full. On the busiest days the roadside parking can spill into natural areas. Visitors may experience delays in accessing recreation sites due to the time spent searching for parking. High visitation on weekends in the peak season sometimes results in significant traffic congestion within Yosemite Valley. This congestion primarily affects visitors and other travelers as they exit the Valley via Northside Drive. A line of waiting vehicles typically backs up along Northside Drive from the intersection at Yosemite Lodge. The line can reach to Yosemite Village and beyond on the busiest afternoons. The congestion from private vehicle traffic delays the operation of the Yosemite Valley Shuttle Bus system, thus reducing its effective capacity and causing overcrowding of the buses during peak times. Park management implements restricted access to the Valley when it determines that local traffic congestion is creating unacceptable human safety, visitor experience, and resource impacts. Restricted access results in the diversion of visitor and other traffic away from roads in Yosemite Valley and onto other roads in the park.

Under Alternative 1, for the short term there would continue to be negligible to minor, adverse impacts on the transportation system during peak periods. In the long term, these adverse effects related to parking and congestion could increase as a result of growth in visitation, primarily extending into additional time periods and on additional days. If they become more frequent and/or more widespread in time, the impacts could increase to local, minor to moderate, and adverse.

Impacts in the Gorge. Current access to the Merced River gorge is limited by available roadside parking along the shoulders of Highway 140 and at two off-road parking areas. Parking availability effectively limits the capacity for visitors who can access this segment of the Merced River.

Under Alternative 1, user capacity would continue to be limited through the existing parking supply in the Gorge segment. Available parking fills relatively infrequently in this area, and additional use could occur during off-peak times. When restricted access is implemented for Yosemite Valley, the parking spaces in the Gorge are likely to become more congested as visitor use is displaced away from the Valley. The existing parking supply in the Gorge would limit the degree to which displaced users from the Valley could be accommodated. If park visitation increases, parking areas in the Gorge could be filled more regularly. If demand is increased by traffic diversion from the Valley, parking may begin to spill onto the shoulders of the road near the current spaces. This could create safety issues for the vehicles parking along Highway 140 in the Gorge and could cause conflicts with through traffic on Highway 140.

Under Alternative 1, for the short term there would be negligible impacts on the transportation system of the Gorge. In the long- term, there could be local, negligible to minor, adverse effects related to parking availability and traffic safety conflicts during peak periods.

Impacts in El Portal. There are no established visitor facilities on National Park Service land in the El Portal segment of the Merced River. Transportation access to river activities is from Highway 140 and Foresta Road via informal parking areas along the shoulders of both roads. There is also a small gravel parking lot for the existing Red Bud commercial raft launch site at the western edge of the El Portal segment. The boundary and management zoning under Alternative 1 would maintain a narrow boundary in El Portal, which would allow for future development of administrative and visitor use facilities in areas outside the corridor. Increased development of employee housing or visitor facilities could result in increased traffic in the areas and would likely result in a local, long-term, minor, adverse effect on transportation conditions in this segment.

Under Alternative 1, user capacity would continue to be limited through the existing parking supply in El Portal. Available parking fills relatively infrequently in this area, and additional use could occur during off-peak times. The existing supply of parking in El Portal would be expected to limit future use of this area to the current peak level of use. Growth in visitor use (primarily rafting and fishing) in the area could result in the parking areas filling more frequently. If parking capacity were exceeded, parking would begin to spill onto the shoulders of the roads near the current spaces. This could create safety issues for the vehicles parking along roadways and could cause conflicts with through traffic.

Overall, Alternative 1 would be expected to result in a local, long-term, negligible to minor, adverse effect on the transportation system in El Portal.

Impacts in Wawona. At present, visitor traffic in the Wawona segments is not actively managed on a daily basis, but is regulated through the capacity of the overnight lodging and parking areas. Parking is actively managed during limited peak periods. The active management of the visitor parking lot at the Mariposa Grove directly affects transportation conditions in Wawona. When the Mariposa Grove lot fills, visitors' vehicles are diverted to other parking areas and visitors travel to the grove via shuttle. Much of the displaced parking occurs in Wawona, primarily near the Wawona Store. The displaced parking from Mariposa Grove frequently causes the parking lot at the store to fill. On many days visitors park vehicles along the road shoulders of Highway 41 and Forest Drive. Some visitors who want to use facilities at Wawona, including the store and the Pioneer Yosemite History Center, may be displaced by the overflow parking conditions.

Under Alternative 1, visitor transportation in the Wawona segment would continue to be controlled by the existing parking supply in the Wawona area. During peak periods when restricted access is implemented for Mariposa Grove, the parking spaces in Wawona could become more congested. If park visitation increases, parking areas in Wawona could be filled more frequently. If sufficient demand is created by traffic diversion from Mariposa Grove or the Valley, parking may begin to spill into additional roadside areas. This could create safety issues for the vehicles parking along Highway 41 and Forest Drive and cause conflicts with through traffic on Highway 41.

Under Alternative 1, for the short term there would be negligible impacts on the transportation system of the Wawona area. In the long term, there could be local, negligible to minor, adverse effects related to access and traffic congestion during peak periods.

Summary of Alternative 1 Impacts. Alternative 1 would continue existing user capacity programs for areas within the Merced Wild and Scenic River corridor. For the short term, continuation of these existing user capacity programs would be expected to result in local, short-term, negligible to minor, adverse effects on the transportation systems. In the long term, Alternative 1 could result in local, negligible to minor, adverse effects on the transportation system.

Cumulative Impacts

Cumulative impacts on transportation are based on analysis of past, present and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of Alternative 1.

Past Actions. Past actions that have affected transportation include the El Portal Road Improvements Project (Segments A, B, and C) and the development of the *Yosemite Valley Plan.* The El Portal Road Improvements Project has provided a minor, long-term, beneficial impact to transportation as it has improved road conditions and safety concerns between the Yosemite National Park boundary and the intersection of the El Portal and Big Oak Flat Roads. The *Yosemite Valley Plan* would implement major changes in transportation to and within Yosemite Valley. The number of private vehicle trips by visitors to and within the Valley would be reduced significantly. Implementation of projects under the *Yosemite Valley Plan* would result in local, long-term, moderate to major, beneficial transportation impacts.

Present Actions. Current projects underway include the South Fork Bridge Replacement, Yosemite Valley Shuttle Bus Procurement, and Yosemite Valley Shuttle Bus Stop Improvements. These current projects would likely result in long- term, minor, beneficial impacts on transportation.

Reasonably Foreseeable Future Actions. The reasonably foreseeable future actions proposed in the region are all expected to have beneficial impacts on the transportation system or the demand for transportation services in the river corridor or the park. These projects include Yosemite Village Interim Parking Improvements, El Portal Concept Plan, El Portal Road Improvements Project (Segment D), Northside-Southside Drive Repaving, and the Yosemite Lodge Area Redevelopment. The Northside-Southside Drive Repaving would provide long- term, minor, beneficial, localized improvements to existing transportation problems, primarily in the areas of safety and efficiency of the transportation system. The Yosemite Village Interim Parking Improvements project would improve some existing traffic congestion points in the Valley and would facilitate the management of parking spaces for day visitors, resulting in minor, beneficial transportation benefits. The Yosemite Lodge Area Redevelopment project would remove the single greatest traffic congestion point in Yosemite Valley, which when combined with Alternative 1 could result in minor to moderate, long- term, beneficial transportation impacts. The El Portal Concept Plan, if successfully implemented, would relocate employee housing and work sites away from Yosemite Valley. This would reduce travel within the Valley by a small amount and result in negligible transportation benefits.

Scenic Resources

Analysis

The following discussion provides an overview of the types of impacts to scenic resources that could occur within each segment of the Merced River corridor under Alternative 1.

Impacts in the Wilderness. Scenic ORVs of the Wilderness segments of the river corridor include views from the Merced River and its banks of the exposed bedrock riverbed, Merced Lake and Washburn Lake, the Bunnell Cascade, the confluence of tributaries, a large concentration of granite domes, and the Clark and Cathedral Ranges. Park management practices and use levels would continue to be based on the Wilderness Act and federal and Yosemite National Park wilderness policies and guidelines, such as the trailhead quota system (which limits and disperses visitor use) and WIMS. Because of the remote location of the Wilderness segments of the river and the low levels of use, continuation of current management direction under Alternative 1 is not expected to affect scenic ORVs.

Impacts in Yosemite Valley. Scenic ORVs within Yosemite Valley include views from the Merced River and its banks of waterfalls and water features (Nevada, Vernal, Illilouette, Yosemite, Sentinel, Ribbon, and Bridalveil Falls and Silver Strand), rock cliffs (Half Dome, North Dome/Washington Column, Glacier Point, Yosemite Point/Lost Arrow Spire, Sentinel Rock, Three Brothers, Cathedral Rocks, and El Capitan), and meadows (Stoneman, Ahwahnee, Cook's, Sentinel, Leidig, El Capitan, and Bridalveil). There is a scenic interface of river, rock, meadow, and forest throughout the Valley segment.

Under Alternative 1, the National Park Service would continue to implement existing user capacity policies. These policies are consistent with the management zoning prescribed in the Merced River Plan and are not expected to adversely affect scenic resources.

Many of scenic resources are insensitive to user-related impacts and would be more directly affected by development within the river corridor, which could result in a loss of vegetative cover and an increase in structures and facilities that could obstruct scenic views.

Alternative 1 would protect and enhance the scenic ORVs through the application of a range of management zones.

Areas zoned Open Space (and Undeveloped Open Space) (2A), Discovery (2B), and Day Use (2C) are designed to enhance scenic ORVs by placing restrictions on new development and encouraging restoration activities. Measures taken to enhance ORVs include closure or restoration of riparian areas and site hardening, such as construction of boardwalks or picnic facilities. New facilities in these management zones are designed in accordance with the Yosemite Valley design guidelines (NPS 2004c), which guides facility design to promote scenic values. Continuing the current method of managing these zones would have a local, long-term, minor to moderate, beneficial impact on scenic resources and the scenic ORVs.

To further protect and enhance the ORVs in other parts of the corridor, areas zoned Camping (3A), Visitor Base and Lodging (3B), and Park Operations and Administration (3C) direct high-impact activities and facilities to areas better able to withstand heavy use or to already developed locations. Potential projects in these developed zones that could affect scenic resources include additional development, vegetation removal, and increased intensity of use. Although new design would follow the park's design guidelines, increased development density, surface hardening, vegetation removal, and increased visitor use (and consequent decrease in opportunities for solitude) would have a local, long-term, minor, adverse impact on scenic resources.

Impacts in the Gorge. Scenic ORVs of the Gorge segment include views from the Merced River and its banks of the Cascades, spectacular rapids among giant boulders, Wildcat Fall, Tamarack

Creek Fall, the Rostrum, and Elephant Rock. The extensive application of 2A+, 2A, and 2B zoning and the quarter-mile boundary over a majority of the Gorge segment would protect and enhance these ORVs. Management zoning in the Gorge segment would substantially limit areas in which new development could occur and would maintain the natural appearance of the gorge, thus ensuring the protection of the scenic ORVs.

Under Alternative 1, the National Park Service would continue to implement existing user capacity policies. These policies are consistent with the management zoning prescribed in the Merced River Plan and are not expected to affect scenic resources.

Impacts in El Portal. Scenic resources in the El Portal segment of the river corridor consist of views of the geologic transition between granite and metasedimentary bedrock along the canyon walls and distinct views of Chinquapin Fall.

Portions of El Portal would be zoned 3C (e.g., the Trailer Village/Abbieville, Old El Portal), which could allow additional development. Since the river corridor boundary is narrow under Alternative 1, there is more potential for development in El Portal in those areas outside the corridor boundary. Such development could change the quality of the visual landscape within the Merced River corridor and could have local, long-term, minor, adverse effects on the scenic resources in El Portal. Implementing mitigation measures described in Appendix B could mitigate adverse effects. The adverse impact on scenic resources in El Portal could be further offset by the potential restoration of the Sand Pit, resulting in a negligible, adverse impact.

Impacts in Wawona. Scenic ORVs of the Wawona segments of the river corridor include views from the Merced River and its banks of large pothole pools within slickrock cascades, old-growth forest, meadows, Wawona Dome, and continual whitewater cascades in the deep and narrow river canyon below Wawona.

Under Alternative 1, park management would continue to implement existing user capacity policies. These policies would be consistent with the management zoning prescribed in the Merced River Plan and would not be expected to adversely affect scenic resources.

Summary of Alternative 1 Impacts. Compliance with existing park policies, including the Yosemite Valley design guidelines, would help ensure that the scenic ORVs in the Wilderness, Yosemite Valley, Gorge, and Wawona segments are protected and enhanced. Application of existing management zoning and other user capacity policies would have a local, long-term, minor, beneficial impact on scenic resources and the scenic ORVs in Yosemite Valley and Wawona due to opportunities to restore degraded areas of the Merced River corridor and remove developments inconsistent with the River Protection Overlay. This beneficial impact would be partially offset by management zoning that would allow for some new development. In the El Portal segment, Alternative 1 would have a minor, adverse impact on scenic resources due to the potential for new development in El Portal. This adverse impact could be partially offset by the restoration of the Sand Pit.

Cumulative Impacts

Cumulative effects on scenic resources are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region. The projects identified below include only those projects that could affect scenic resources within the Merced River corridor or in the park vicinity.

Past Actions. Scenic resources have been affected by numerous past actions since the inception of the park. Primary among these is the alteration of natural communities caused by Euro-American settlers who lived in the park. For example, attempts to establish agriculture and the development of tourism resulted in the drying out of the Valley by breaching the El Capitan moraine and suppressing naturally occurring fires, which affected vegetation patterns along the Merced River. Broad-leafed trees along the riverbanks were replaced by the comparatively dense stands of conifers that exist today. These activities have had a local, long-term, moderate, adverse effect on scenic resources, because the conifers now block views of important scenic resources that were visible before the vegetation patterns were changed.

Recent park projects that have benefited scenic resources within the river corridor include the *Fire Management Plan*, which addresses improvements to ecosystem health through integration of fire management principles and other vegetation management principles, and the Cascades Diversion Dam Removal, which restored the natural flow of the Merced River at the top of the Gorge segment, thereby improving scenic resources.

Projects implemented under the *Yosemite Valley Plan* could include improvements to the natural setting through restoration and improved site design. Adverse effects on scenic resources could occur in areas of new development.

Present Actions. Current projects that adversely affect scenic resources due to increased development and obstruction of views include the Yosemite Motels Expansion in El Portal and the Curry Village Employee Housing in Yosemite Valley.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into three general categories: (1) projects anticipated to have a net beneficial effect; (2) projects anticipated to have both adverse and beneficial effects; and (3) projects anticipated to have an adverse effect.

Projects that could have a net beneficial cumulative effect on scenic resources include those that improve the built environment to better address significant views. Examples of projects that could have a beneficial cumulative, effect on scenic resources include:

- Yosemite Lodge Area Redevelopment
- Visitor Use and Floodplain Restoration Program
- El Portal Old Wastewater Treatment Facility Removal

Projects that prescribe increased development—especially development in previously undeveloped areas—would have a long-term, moderate, adverse impact to scenic resources. Examples of projects that could have both adverse and beneficial effects on scenic resources include:

- El Portal Concept Plan
- Tuolumne Meadows Concept Plan
- Tuolumne Wild and Scenic River Comprehensive Management Plan
- Update to the *Yosemite Wilderness Management Plan*

All four of these plans could improve the natural setting through restoration and improved site design. Adverse effects on scenic resources could occur in areas of new development.

Examples of projects that could have a adverse cumulative effect on scenic resources include:

- Environmental Education Campus Development Program
- Indian Cultural Center
- Yosemite Village Interim Parking Improvements

The local, long-term, adverse effects of these projects would be related to the potential introduction of new structures and infrastructure that would intrude into views of important scenic resources within or viewable from the Merced River corridor. For example, the Yosemite Village Interim Parking Improvements could result in a decrease in vegetation, an increase in the glare caused by parked vehicles, and an increase in hardscape. The effects of this development would be visible from important Valley-rim viewpoints such as Glacier Point. The Indian Cultural Center would introduce new structures into a currently undeveloped part of the Valley and would adversely affect foreground views.

These past, present, and foreseeable future projects would have a long-term, minor, adverse impact because the beneficial effects associated with restoration, vegetation management, and vehicle reduction would be slightly outweighed by the potential for increased development and a decreased ability to view and experience scenic resources.

Overall, these cumulative actions in combination with Alternative 1 could have a net long-term, minor, adverse impact on scenic resources and the scenic ORVs within the Merced River corridor.

Impairment

Because impacts associated with Alternative 1 are expected to be beneficial or only negligibly adverse, this alternative would not be expected to impair the park's scenic resources for future generations.

Socioeconomics

Social Environment

Analysis

Under Alternative 1, park management would continue to manage user capacity based on current policies, including wilderness trailhead quotas, facility limits, and limits on specific activities. The river corridor for the El Portal segment would be the same as identified in the Merced River Plan.

Since the No Action Alternative would not change existing policies regarding facilities and operations within the river corridor segments, there would be no substantive changes to the social environments within the river corridor. Existing housing, community amenities, and other facilities could continue to be used as they are currently. Commute times to and from the park from various areas would likely increase in the future, because overall visitation to the park would result in increased traffic on roads used for commuting.

Impacts in Wilderness Areas. There are limited facilities in park wilderness areas, and few employees are stationed in these areas. User capacity would continue to be managed under the existing trailhead quotas, and visitor and employee levels would be expected to remain at current levels. The No Action Alternative is not expected to affect the social environment in Wilderness segments of the river corridor.

Impacts in Yosemite Valley. The No Action Alternative would not require changes to existing employee housing, available amenities, or other facilities in the Valley. Park planning efforts and future development in the Valley would continue to be based on the *General Management Plan* and on existing utility capacities within the Valley. Since the *General Management Plan* calls for reduced administrative facilities in the Valley, employee housing in the Valley would likely decrease in the future. Commute times to the Valley from other areas are not expected to change in the short term, but could increase in the long term with increases in park visitation and traffic levels on roads leading to the park. Overall, effects from Alternative 1 on the social environment would likely be local, long-term, minor, and beneficial due to decreased crowding in Yosemite Valley. Effects on employees relocated out of the Valley would be local, minor to moderate, and adverse due to increased commutes over time. The intensity of the adverse effect would depend upon the level of housing increases or decreases and where this employee housing was replaced.

Impacts in El Portal. Continuation of user capacity management policies under the No Action Alternative would not require changes to employee housing in El Portal, amenities, or other facilities located there. Park planning efforts and future development in El Portal would continue to be based on the *General Management Plan* and on existing utility capacities. Since the *General Management Plan* calls for increased employee housing in El Portal, it is likely that the level of employee housing would increase in the future, while remaining within utility capacities.

The river corridor boundary and management zoning in El Portal under Alternative 1 is consistent with existing uses of the corridor and would not expected to require changes to housing, community amenities, or facilities. The narrow corridor boundary would allow for future development of new or expanded park administrative facilities outside the corridor in the El Portal area. Future increased development within the El Portal Administrative Site could result in local, long-term, minor to moderate, adverse effects on community amenities due to the potential for increased administrative staff and/or employee housing in the area. The intensity of the impacts would depend on the level of development within the El Portal Administrative Site.

Impacts in Wawona. The No Action Alternative would not change how user capacity is currently managed in Wawona. Therefore, there would be no changes to housing, community amenities, or other facilities. Park planning efforts and future development in Wawona would continue to be based on the *General Management Plan* and on existing utility capacities. Park staffing and employee housing in Wawona could increase or decrease in the future, within the limits of the utility capacities. The *General Management Plan* calls for increased employee housing in Wawona; therefore, employee housing would likely increase in the future, within the limits of the utility capacities. Commute times to Wawona from other areas would not be expected to change in the short term, but could increase in the long term with increases in park visitation and traffic levels on roads leading to the park. Overall effects from Alternative 1 on the social environment are expected to be local, long-term, minor to moderate, and adverse due to changes in housing levels and increased commutes over time. The intensity of the adverse effect would depend upon the level of housing increases or decreases and where this employee housing was replaced.

Summary of Alternative 1 Impacts. The continuation of user capacity policies within the river corridor would not require substantive changes to existing housing and facilities in the local communities within the corridor. Housing and staffing in these areas could increase or decrease in the future, within the limits of the existing utility capacities. Commute times would not be expected to change in the short term, but could increase in the long term with increases in park visitation and traffic levels on roads leading to the park. Overall effects from Alternative 1 on the social environment are expected to be local, long term, minor to moderate, and adverse due to potential changes in housing levels and increased commutes over time. The intensity of the adverse effect would depend upon the level of housing increases or decreases and where this employee housing was replaced.

Cumulative Impacts

This discussion of the cumulative effects on the social environment is based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of this alternative.

Past Actions. The *Yosemite Valley Plan*, completed in 2000, provides guidance for the relocation of park and concessioner employee housing and other administrative facilities from the Valley to El Portal and Wawona, as called for in the *General Management Plan*. Implementation of this plan would result in mixed effects on the social environments in the river corridor. The social environment in Yosemite Valley would experience local, long-term, beneficial effects associated with reduced crowding, more secure housing conditions, and increased privacy. The social environment of the workforce would also experience local, long-term, adverse effects associated with increases in commuting time, changes of housing locale, and decreases in social amenities near housing sites. The social environment in El Portal and Wawona would experience local, long-term, adverse effects due to the potentially substantial increases in housing in these communities, although it is expected that the population growth would be gradual. Even though the *Yosemite Valley Plan* calls for the placement of community amenities in El Portal, there could be strains on the limited community amenities of El Portal and Wawona resulting from the population growth.

Present Actions. Current projects include projects that benefit the social environment and projects that adversely affect the social environment in the river corridor.

The Mariposa County General Plan Update and the Curry Village Employee Housing project are expected to benefit the social environment in the corridor. The Curry Village Employee Housing project provides for new, efficiently designed employee housing to replace crowded temporary housing areas that were developed after the January 1997 flood. The Mariposa County General Plan Update will evaluate and address countywide land-use issues and is expected to benefit the social environment throughout the county.

The Yosemite Motels Expansion project is expected to have short- and long-term, adverse effects on the social environment in El Portal. This project could result in short-term construction effects and in longer term effects related to increased development and traffic congestion in the El Portal area.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region are separated below into three general categories: (1) projects anticipated to have a net beneficial effect; (2) projects anticipated to have a net adverse effect; and (3) projects anticipated to have a mixed effect.

A reasonably foreseeable future project that could have a cumulative, beneficial effect on the social environment is:

- El Portal Concept Plan

The El Portal Concept Plan will evaluate development opportunities and constraints in El Portal and evaluate the potential for relocation of employee housing and other park administrative facilities from the Valley to El Portal. This planning effort would be expected to develop a design plan that protects the ORVs in the El Portal segment and provides for needed amenities that will benefit the social environment in El Portal.

Together, the past, present and reasonably foreseeable future projects would have a local, long-term, minor to moderate, adverse effect on the social environments within the corridor due to increased housing and population pressures in El Portal and Wawona and increased commutes for employees relocated from the Valley. The impact intensity of any planning projects would depend on the extent to which the plan's recommendations are implemented.

Alternative 1 and the cumulative projects would have a local, long-term, minor to moderate, cumulative, adverse effect on the social environments within the corridor due to increases in housing and population pressures in El Portal and Wawona. The impact intensity would depend on the extent to which the cumulative projects' recommendations are implemented.

Visitor Populations

Analysis

Alternative 1 would provide for the continued implementation of existing park policies regarding visitor use within the river corridor. These include wilderness trailhead quotas, facility limits, and limits on specific activities. These policies would allow for continued growth in visitor populations to the point where visitation is constrained by existing facilities (i.e., lodging and parking). In the long-term, Alternative 1 could result in higher visitation levels in the future resulting in a need for increased use of restricted access policies. The level of overnight accommodations for visitors in the park would remain consistent with the overall developed area capacities identified in the *General Management Plan* and would be constrained by existing utility capacities. Under Alternative 1, the composition of the Yosemite visitor population (the ratio of park overnighters to day visitors) is not expected to change from existing conditions.

Summary of Alternative 1 Impacts. Alternative 1 is not expected to result in any substantive changes in visitor populations in the park. Long-term increases in visitor levels would likely result in increased use of restricted access policies during peak periods.

Cumulative Impacts

This discussion of cumulative impacts on visitor populations is based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of this alternative.

Past Actions. The *Yosemite Valley Plan*, completed in 2000, provides for a reduction in overnight accommodations in Yosemite Valley, which would result in a local, long-term, adverse impact on visitors due to decreased opportunities to lodge and camp in the Valley.

Present Actions. The Yosemite Motels Expansion project provides for additional overnight accommodations close to the park. This project is expected to result in a local, long-term, beneficial effect on visitor populations.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future projects that could have a cumulative, beneficial effect on visitor populations include:

- Curry Village and East Yosemite Valley Campgrounds Improvements
- Yosemite Lodge Area Redevelopment

These projects would result in the development of some new overnight accommodations in the Curry Village and Yosemite Lodge areas. These projects would have a local, long-term, beneficial impact on visitor populations by increasing overnight accommodations in the park.

The cumulative projects would have a regional, long-term, negligible to minor, adverse impact on visitor populations due to the overall reduction in overnight accommodations in Yosemite Valley. This adverse effect would be offset somewhat by additional overnight accommodations being constructed outside the park.

Overall, Alternative 1 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a local, long-term, negligible to minor, adverse impact on visitor populations, due to the potential overall reduction in the number of lodging and camping units in the park. This effect is offset somewhat by development of overnight accommodations in areas outside the park.

Regional Economy

Analysis

Under Alternative 1, the number of overnight accommodations and the composition of the Yosemite visitor population are not expected to change substantively from existing conditions. Yosemite visitor spending in the region would be expected to increase with increased visitor levels, resulting in a local, long-term, negligible to minor, beneficial effect on the regional economy. Alternative 1 is not expected to result in any shifts in regional employment.

Summary of Alternative 1 Impacts. Under Alternative 1, visitor populations and visitor spending would be expected to increase in the long-run, resulting in a regional, long-term, negligible to minor, benefit to the regional economy.

Cumulative Impacts

The cumulative impacts to the regional economy discussed in this section are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of this alternative.

Past Actions. The *Yosemite Valley Plan*, completed in 2000, calls for substantial construction associated with the relocation of administrative and employee housing facilities and redevelopment of areas within Yosemite Valley. This would have a short-term, beneficial impact on the regional economy due to project construction spending and employment. In the long term, the *Yosemite Valley Plan* would decrease in-park accommodations and increase accommodations outside the park. Overall, the economic impacts to the regional economy of changes from visitor spending and operations spending are expected to be long-term and beneficial.

Present Actions. Current projects that affect the regional economy include the Yosemite Motels Expansion, Yosemite Valley Shuttle Bus Stop Improvements, Utilities Master Plan/East Yosemite Valley Utilities Improvement Plan, Resources Management Building, South Fork Bridge

Replacement, and Curry Village Employee Housing. Construction spending associated with these projects is expected to have a short-term, beneficial impact on the regional economy due to project construction spending and employment.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future projects that could have a cumulative, beneficial effect on the regional economy include:

- Curry Village and East Yosemite Valley Campground Improvements
- El Portal Road Improvements Project (Segment D)
- Indian Cultural Center
- Yosemite Lodge Area Redevelopment
- Wawona Campground Rehabilitation
- Yosemite Village Interim Parking Improvements

These projects are expected to have a short-term, beneficial impact on the regional economy due to project construction spending and employment. Development of new campgrounds and cabins near Curry Village would increase the overnight lodging capacity in Yosemite Valley somewhat, which would increase visitor spending and benefit the regional economy.

These cumulative projects would have a short-term, minor, beneficial effect on the regional economy, primarily due to construction spending and employment. The cumulative projects would have a long-term, negligible to minor, beneficial effect on the regional economy due to increased regional output and employment resulting from increased overnight accommodations in the park and in local communities.

Overall, Alternative 1 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a cumulative, short-term, minor, beneficial impact on the regional economy due to construction spending and employment and a long-term, negligible to minor, beneficial impact on the regional economy due to increased overnight accommodations in the park and in local communities.

Concessioner

Analysis

Continuation of current policies regarding user capacity within the Merced River corridor would not substantively change the services and facilities operated by the primary park concessioner. Increases in future visitor populations would result in a local, long-term, negligible to minor, benefit to the concessioner.

Summary of Alternative 1 Impacts. Under Alternative 1, accommodations and facilities in the park would be maintained at their current levels. Increases in future visitor populations would result in a local, long-term, negligible to minor, benefit to the concessioner.

Cumulative Impacts

Cumulative impacts to concessioner operations are based on analysis of past, present, and reasonably foreseeable future actions in the Yosemite region in combination with potential effects of this alternative.

Past Actions. The *Yosemite Valley Plan*, completed in 2000, provides for a reduction in overnight accommodations in Yosemite Valley and relocation of some employee housing to areas outside of the Valley, which would result in a local, long-term, adverse impact on concessioner operations.

Present Actions. The Curry Village Employee Housing project will provide safe and efficient housing for some concessioner employees currently housed in temporary housing in the Valley. This would result in a local, long-term, beneficial effect on concessioner operations.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions proposed in the region that could affect concessioner operations are separated below into two general categories: (1) projects anticipated to have a net beneficial effect; and (2) projects anticipated to have a net adverse effect.

Reasonably foreseeable future projects that could have a cumulative, beneficial effect on concessioner operations include:

- Curry Village and East Yosemite Valley Campgrounds Improvements
- Yosemite Lodge Area Redevelopment

These projects will add some overnight accommodations in the Valley and result in more visitor spending, resulting in a long-term benefit on concessioner operations.

A reasonably foreseeable future project that could adversely affect the concessioner is the update to the *Yosemite Wilderness Management Plan.* New policies adopted in this plan could restrict or reduce facilities and/or activities in the wilderness, including concessioner run facilities, resulting in a potential loss of revenues to the concessioner.

The cumulative projects would have a local, long-term, minor to moderate, adverse impact on the primary park concessioner associated with locating new employee housing outside of the Valley and possible restrictions or reductions in wilderness facilities or activities. The adverse effect would be partially offset by increased accommodations being developed in Curry Village and at Yosemite Lodge. The impact intensity of any planning projects would depend on the extent to which the *Yosemite Valley Plan's* recommendations are implemented.

Overall, Alternative 1 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor to moderate, cumulative adverse impact on the concessioner associated with locating new employee housing outside of the Valley and possible future restrictions in wilderness areas.

Park Operations and Facilities

Analysis

The following discussion provides an overview of the types of impacts to park operations, infrastructure, facilities, and energy consumption that could occur within each segment of the Merced River corridor under Alternative 1. Under Alternative 1, park management would continue to protect and enhance the ORVs of the Merced River through implementation of the Merced River Plan and other existing park management policies.

Park Operations

Impacts in Wilderness. Park operations in the Wilderness segments include (1) visitor protection personnel (backcountry patrol rangers and Little Yosemite Valley campground rangers); (2) National Park Service and concessioner stock operations personnel that support trail maintenance, forestry management, and the Merced Lake High Sierra Camp; (3) facilities maintenance personnel that perform trail repair and construction and campground maintenance; and (4) resources management and science personnel that monitor impacts to river-related ORVs.

User capacity within the Wilderness segments is currently addressed through the existing trailhead quota system and monitoring of wilderness resource conditions under WIMS. Under Alternative 1, the trailhead quota system would continue to be implemented. The trailhead quota system has been in place for more than 25 years and is currently operating below capacity. Until capacity is reached, it is expected that any increase in visitor use could be accommodated without increasing park staff, ranger patrols, or related wilderness activities (such as periodic restoration in some areas and continued implementation of WIMS). Therefore, Alternative 1 would likely have a negligible effect on park operations in the Wilderness segments of the Merced River corridor.

Impacts in Yosemite Valley. Park operations in Yosemite Valley include (1) visitor protection and law enforcement personnel (enforcement patrol rangers, mounted-horse patrol rangers, traffic management, emergency medical response, structural and wildland fire protection, and resource protection); (2) National Park Service and concessioner stock operations personnel in two stables and tack storage areas; (3) administrative management personnel (Superintendent's Office); (4) facilities maintenance personnel that perform water and electric utility systems maintenance, road and trail repair and construction, campground maintenance, and employee and administrative buildings and grounds maintenance; (5) resources management and science personnel that perform ecological restoration project implementation, wildlife management, and monitoring of impacts to river-related ORVs; (6) business and revenue management personnel; and (7) interpretation personnel at the Yosemite Valley Visitor Center and Museum, the Nature Center at Happy Isles, and the park media relations office and field operations (such as evening programs and ranger-led walks).

Visitor capacity in the Valley is not actively managed on a daily basis, but is controlled through facility capacities, primarily related to overnight accommodations and available parking. Current management practices sometimes result in heavy traffic congestion on peak summer weekends and holidays, when parking facilities can reach capacity. Park management occasionally restricts access to the Valley, and park personnel are required to manage traffic along roads and at key intersections and to assist with parking during periods of peak use. In addition, heavy traffic congestion has at times impeded emergency vehicle access, which in turn adversely affects visitor safety.

Under Alternative 1, heavy traffic congestion during periods of peak visitation would continue to require park personnel to manage traffic flow and assist with visitor parking, resulting in minor to moderate, adverse impacts to park operations and visitor safety during periods of high visitor use.

Impacts in the Gorge. Park operations in the Gorge segment include (1) visitor protection personnel (law enforcement patrol rangers, emergency medical response, structural and wildland fire protection, and resources protection); (2) facilities maintenance personnel that perform water and electric utility systems maintenance, road repair and construction, picnic area maintenance, and employee and administrative buildings and grounds maintenance; (3) resources management and science personnel that conduct wildlife management and ecological monitoring and restoration activities; and (4) business and revenue management personnel that staff the Arch Rock Entrance Station.

Although the Gorge segment has limited visitor facilities, implementation of the Restricted Access Plan in Yosemite Valley could increase visitation in the gorge and thus have adverse effects on park operations and facilities in the Gorge segment. However, the majority of the Gorge segment is relatively inaccessible, and visitor use is likely to increase only slightly during peak visitation periods in areas of easy access (e.g., road turnouts and the Cascades area). Consequently, under Alternative 1, the effects on park operations in the Gorge are expected to be negligible.

Impacts in El Portal. Park operations in El Portal include (1) visitor protection personnel (law enforcement patrol rangers, emergency medical response, structural and wildland fire protection, and resource protection; (2) facilities maintenance personnel that perform water and electric utility systems maintenance, wastewater treatment plant operations, historic preservation, road repair and construction, community amenity maintenance (such as fields, play parks, and public restrooms), employee and administrative buildings and grounds maintenance, and project design and engineering; (3) resources management and science personnel; (4) business and revenue management staff associated with the Office of Special Park Uses; (5) administrative management personnel associated with shipping and receiving operations, human resources, fiscal and employee housing offices, information technology, and procurement/contracting; (6) interpretation personnel associated with curatorial and archiving operations and park publications; and (7) project management personnel that perform environmental and cultural resources NEPA compliance and construction management operations.

Under Alternative 1, the boundary for the El Portal segment of the river corridor would be based on the 100-year floodplain or the River Protection Overlay, whichever is greater. The No Action Alternative zoning defines 56 acres as Park Operations and Administration (3C), and 137 acres as Day Use (2C).

The river corridor boundary and zoning under Alternative 1 are not expected to affect park operations, which would be limited to periodic routine maintenance and repair activities. Alternative 1 provides flexibility for park management to relocate utilities, facilities, and services to El Portal that are currently within park boundaries, which would require the removal of park operations from the park and the design and construction of new facilities in the El Portal Administrative Site. The removal of existing facilities and the construction of new facilities would result in a short-term, minor impact to park operations. However, the river corridor boundary and zoning associated with Alternative 1 would result in an overall long-term, moderate, beneficial impact to park operations.

Impacts in Wawona. Park operations in Wawona include (1) visitor protection personnel (law enforcement patrol rangers, emergency medical response, structural and wildland fire protection, and resource protection); (2) facilities maintenance personnel that perform water and electric utility systems maintenance, wastewater treatment plant operations, road and trail repair and construction, and employee and administrative buildings and grounds maintenance; (3) resources management and science personnel; (4) business and revenue management personnel associated with campground operations; and (5) interpretation personnel associated with the Pioneer Yosemite History Center and field operations (such as evening programs and ranger-led walks).

Visitor capacity in the Wawona segments is not actively managed, but is limited by available overnight lodging and parking areas. The Wawona area experiences heavy traffic congestion during peak visitation periods due to limited parking capacity at the Mariposa Grove of Giant Sequoias and the South Entrance Station. Users who cannot be accommodated in either of these locations are encouraged to park in the Wawona Service Station/Grocery Store parking lot, which in turn causes congestion for users trying to access the Pioneer Yosemite History Center and concessioner stable operations. Park operations are adversely affected in terms of the need for additional visitor protection staff to manage traffic and visitor safety in the area.

Under Alternative 1, the effects to park operations are expected to be negligible, except during peak periods when additional park personnel are required to manage traffic congestion. During these periods, the effects to park operations in the Wawona segments of the river corridor are expected to be short term, minor to moderate, and adverse.

Park Infrastructure and Facilities

Impacts in Wilderness. Park infrastructure and facilities in the Wilderness segments include Little Yosemite Campground, Moraine Dome Campground, the Merced Lake High Sierra Camp, Backpackers Campground, and the Merced Lake Ranger Station. There are restrooms in Little Yosemite Valley, the Merced Lake High Sierra Camp, and the Merced Lake Campground. Additionally, there are 10 footbridges within the corridor.

User capacity within the Wilderness segments is currently addressed through trailhead quotas and monitoring of wilderness resource conditions under WIMS. Under Alternative 1, the trailhead quota system would continue to be implemented. Although park visitation is expected to increase in the future, the trailhead quota system could accommodate additional demand before reaching capacity.

Until capacity is reached, it is expected that any increase in wilderness visitation could be accommodated without additional park infrastructure or facilities. Therefore, Alternative 1 is expected to have a negligible effect on park infrastructure and facilities in the Wilderness segments of the Merced River corridor and would be limited to those resulting from periodic routine maintenance activities.

Impacts in Yosemite Valley. Park infrastructure and facilities in Yosemite Valley include an extensive network of underground water, sewer, and electric utilities; a network of roads, bridges (roadway and pedestrian), and paved and unpaved trails; parking lots; public restrooms; shuttle buses; lodging and campground facilities; eating and retail establishments; swimming pools; tennis courts; an ice rink; and administrative, maintenance, and storage facilities. Under Alternative 1, these facilities would continue to operate within their design capacities. During peak visitation periods (summer and certain holidays), some of these facilities reach and sometimes exceed their design capacities (e.g., lodging, campgrounds, roads, intersections, and parking facilities).

Under Alternative 1, the overall effects to park infrastructure and facilities are expected to be long term, adverse, and minor and would be limited to those resulting from periodic routine maintenance and repair activities.

Impacts in the Gorge. Park infrastructure and facilities in the Gorge segment include El Portal Road; an aboveground electric transmission line to the decommissioned Cascades Powerhouse; an underground sewer, electric, and communications utility corridor along the entire length of the Merced River gorge; the Arch Rock Entrance Station; restroom facilities; the Cascades Picnic Area; and the Cascades Creek Bridge. The majority of the Gorge segment is relatively inaccessible, and visitor use is likely to increase only slightly during peak visitation periods in easily accessible areas (e.g., road turnouts and the Cascades Picnic Area).

Therefore, under Alternative 1, the overall effects to park infrastructure and facilities in the Gorge segment are expected to be negligible and would be limited to those resulting from periodic routine maintenance and repair activities.

Impacts in El Portal. Park infrastructure and facilities in El Portal include Highway 140, the El Portal Wastewater Treatment Plant, aboveground electric and communication transmission lines that run to (and beyond) the park boundary, an underground water and sewer utility corridor in the El Portal Administrative Site, three employee housing areas (Rancheria Flat, Old El Portal, and Trailer Village/Abbieville), National Park Service and park partner administrative offices, maintenance and warehouse storage facilities, and community amenities (such as the Child Development Center and Community Hall).

The river corridor boundary and zoning are not expected to affect existing infrastructure and facilities in El Portal, and park operations activities would be limited to periodic routine maintenance.

The No Action Alternative zoning defines 56 acres as Park Operations and Administration (3C), and 137 acres as Day Use (2C). The river corridor boundary and zoning designations under Alternative 1 provide park management with the flexibility to relocate utilities, facilities, and services to El Portal that are currently within park boundaries, which would require the removal of park infrastructure and facilities from the park and the design and construction of new facilities in the El Portal Administrative Site. The removal of existing facilities and the construction of new facilities would represent a short-term, minor impact to park infrastructure and facilities. However, the river corridor boundary and zoning associated with this alternative would result in an overall long-term, minor to moderate, beneficial impact to park infrastructure and facilities in the El Portal segment of the river corridor.

Impacts in Wawona. Park infrastructure and facilities in the Wawona segments include Wawona Road, the Wawona Wastewater Treatment Plant and maintenance complex, an underground water and sewer utility corridor, employee housing, community amenities, campgrounds, the Pioneer Yosemite History Center, and the Wawona Hotel and Golf Course.

During peak visitation periods (summer and certain holidays), some of these facilities reach and sometimes exceed their design capacities (e.g., roads, intersections, and parking facilities). However, under the No Action Alternative, the overall effects to park infrastructure and facilities would likely be negligible and would be limited to those resulting from periodic routine maintenance and repair activities.

Energy Consumption

Impacts in Wilderness. Energy consumption in the Wilderness segments of the river corridor is confined to the use of propane gas, diesel fuel, and wood for operations at the Merced Lake High

Sierra Camp and Merced Lake Ranger Station. Propane gas is used for refrigeration, stoves/ovens, and lighting. Diesel fuel is used as a backup power source to power generators if propane gas is not available. Wood is used in campfires and indoor wood stoves.

Energy use would likely continue in the manner described above. Therefore, Alternative 1 is expected to have a negligible effect on energy consumption in the Wilderness segments.

Impacts in Yosemite Valley. Energy consumption for day-to-day National Park Service and concessioner operations in Yosemite Valley is the highest of the river corridor segments. The types of energy used in the Valley include electricity, propane gas, engine oil, diesel fuel, gasoline, and wood.

Under Alternative 1, housing and facilities in the Valley would not change and therefore space- and water-heating energy consumption would remain the same as under existing conditions. Although vehicle-use patterns would not change, the total visitor, employee, and National Park Service/concessioner vehicle gasoline and diesel fuel consumption is expected to decline in the future due to improved fuel economy and the increased use of alternative fuels, resulting in a long-term, beneficial impact. In addition, Alternative 1 is not expected to have a discernible impact on home energy consumption because the housing stock would remain the same.

Overall, Alternative 1 would result in a long-term, minor, beneficial impact with respect to energy consumption in the Valley segment.

Impacts in the Gorge. Energy consumption for facilities operations in the Gorge segment includes the use of electricity and propane gas. Energy use would likely continue at current levels. Therefore, Alternative 1 is expected to have a negligible effect on energy consumption in this segment of the river corridor.

Impacts in El Portal. Energy consumption for employee housing areas, concession operations, administrative and maintenance operations, and community amenities in El Portal includes the use of electricity, propane gas, engine oil, diesel fuel, gasoline, and wood.

Impacts related to energy consumption in El Portal would be similar to those described for Yosemite Valley. Under Alternative 1, space- and water-heating energy consumption in El Portal would remain the same because housing and facilities would not change. Although vehicle-use patterns would not change, the total visitor, employee, and National Park Service/concessioner vehicle gasoline and diesel fuel consumption is expected to decline in the future due to improved fuel economy and the increased use of alternative fuels, resulting in a long-term, beneficial impact. In addition, Alternative 1 is not expected to have a discernible impact on home energy consumption because the housing stock would remain the same.

Overall, Alternative 1 would result in a long-term, minor, beneficial impact with respect to energy consumption in the El Portal segment of the river corridor.

Impacts in Wawona. Energy consumption in the Wawona segments includes the use of electricity, propane gas, engine oil, diesel fuel, gasoline, and wood. Impacts related to energy consumption in Wawona would be similar to those described for El Portal and Yosemite Valley. Under Alternative 1, space- and water-heating energy consumption in Wawona would remain the same because housing and facilities would not change. Although vehicle-use patterns would not change, the total visitor, employee, and National Park Service/concessioner vehicle gasoline and diesel fuel consumption is expected to decline in the future due to improved fuel economy and the increased use of alternative fuels, resulting in a long-term, beneficial impact. In addition, Alternative 1 is not expected to have a discernible impact on home energy consumption because the housing stock would remain the same.

Overall, Alternative 1 represents a long-term minor, beneficial impact with respect to energy consumption in the Wawona segments of the river corridor.

Summary of Alternative 1 Impacts. The effects of Alternative 1 on park operations are expected to be negligible, except during times of high visitor use when additional park personnel are required to manage traffic congestion and visitor safety in the Valley and Wawona. During these periods, the effects to park operations would likely be short term, minor to moderate, and adverse.

During peak visitation periods (summer and certain holidays), some of the park's facilities reach and sometimes exceed their design capacities in the Valley and Wawona. However, under Alternative 1, the overall effects to park infrastructure and facilities are expected to be negligible and limited to those associated with periodic routine maintenance and repair activities.

The river corridor boundary and zoning in El Portal under Alternative 1 would result in an overall long-term, minor to moderate, beneficial impact to park operations, infrastructure, and facilities.

Alternative 1 would result in an overall long-term, minor, beneficial impact with respect to energy consumption, primarily because gasoline and diesel fuel consumption is expected to decline in the future due to improved fuel economy and the increased use of alternative fuels.

Cumulative Impacts

Cumulative impacts on park operations and facilities are based on an analysis of past, present, and reasonably foreseeable future actions in the immediate Yosemite region in combination with potential effects of this alternative. The extent to which past, present, or reasonably foreseeable projects could have a cumulative effect, when combined with other actions that could result under current National Park Service management strategies, is determined by whether such projects would affect demand for park operations, services, and facilities, including maintenance of utility systems, campgrounds, roads, and trails; provision of interpretation programs; visitor protection; and natural and cultural resources protection.

Past Actions. Park operations and facilities have been affected by numerous past National Park Service management decisions since the inception of Yosemite National Park. Primary among these are the relocation of administrative and maintenance support functions and facilities to El Portal (mostly beneficial); the addition of new employee housing in El Portal (mostly beneficial); the rehabilitation of water, sewer, electric, and communications utility systems (mostly beneficial); and the removal of old wastewater treatment plants from Yosemite Valley and El Portal to the new location at Railroad Flat in El Portal. More recent actions that have affected park operations and facilities include the Cascades Diversion Dam Removal (mostly beneficial) and the El Portal Road Improvements Project (Segments A, B, and C).

Overall, the net cumulative effect of these past actions is beneficial in that they have served to consolidate, modernize, or update park operations and facilities; have removed facilities that were unsafe or required continued maintenance and repair; or responded to potential safety concerns for park personnel or visitors.

Present Actions. Present actions that affect park operations and facilities include the following:

- Curry Village Employee Housing
- Happy Isles Dam Removal
- Happy Isles to Vernal Fall Trail Reconstruction
- Lower Yosemite Fall Project
- Replacement/Rehabilitation of Yosemite Valley Force Main Sewer Line
- Resources Management Building
- South Fork Bridge Replacement
- Yosemite Valley Shuttle Bus Procurement
- Yosemite Valley Shuttle Bus Stop Improvements
- Utilities Master Plan/East Yosemite Valley Utilities Improvement Plan

These projects, which are in various stages of implementation, represent a short-term, adverse impact to park operations and facilities because planning, design development, and construction activities associated with these projects place increased demands on park operations staff. However, in the long term (after the above-listed actions are completed), it is expected that these projects would provide a net beneficial cumulative effect on park operations and facilities. The benefits would result because these actions would serve to consolidate, modernize, or update park operations and facilities; increase overall operational efficiency; and, in some instances, help park staff to provide enhanced education and interpretation programs for visitors.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions that would have an effect on park operations and facilities include the following:

- Out-of-Valley Campground Plan
- Wawona Campground Rehabilitation
- El Portal Road Improvements Project (Segment D)
- Parkwide Data Communications
- Update to the *Yosemite Wilderness Management Plan*
- Northside-Southside Drive Repaving
- Curry Village and East Yosemite Valley Campgrounds Improvements
- El Portal Concept Plan
- Indian Cultural Center
- Tuolumne Meadows Concept Plan
- Tuolumne Wild and Scenic River Comprehensive Management Plan
- Yosemite Lodge Area Redevelopment
- Yosemite Village Interim Parking Improvements
- El Portal Old Wastewater Treatment Facility Removal

Planning and design for these future actions will create a short-term, minor to moderate, adverse impact on park operations and facilities by placing increased demands on park operations staff. However, in the long term (after these actions are completed), it is expected that these projects would provide an overall long-term, beneficial cumulative effect on park operations and facilities by consolidating, modernizing, or updating park operations and facilities; increasing overall operational efficiency; reducing or minimizing long-term maintenance and repair requirements; and, in some instances, helping park staff to provide enhanced education and interpretation programs for visitors.

These past, present, and reasonably foreseeable future actions could have short-term, minor to moderate, adverse impacts to park operations and facilities during the planning, design, and construction phases. Overall, these cumulative actions, combined with Alternative 1, could have a net long-term, beneficial cumulative effect on park operations and facilities.

Unavoidable Adverse Impacts

The following discussion identifies unavoidable adverse impacts to resources associated with implementation of Alternative 1, the No Action Alternative. For the purposes of this document, these impacts have been identified as being unavoidable, moderate to major, and adverse.

- Man-made obstructions would continue to obstruct the free-flowing characteristics of the Merced River and subsequently alter stream processes that define channel characteristics such as channel shape and sinuosity and the ability of the river to naturally discharge and dissipate channel-forming flows or flood flows. The streamflow would continue to be permanently altered and would adversely affect the ORVs associated with the free-flowing nature of the river, resulting in an unavoidable adverse impact.
- Heavy traffic congestion during periods of peak visitor use would continue to require park personnel to help manage traffic flow and assist with visitor parking in Yosemite Valley, resulting in unavoidable adverse impacts to park operations and visitor safety during periods of high visitor use.
- In El Portal, the existing river boundary and management zoning could result in unavoidable adverse impacts to land use due to the narrow river corridor and the potential for increased development density in the area outside the river corridor in the future.

Irreversible and Irretrievable Commitments of Resources

Alternative 1 would not result in the temporary or permanent loss of any resource, other than energy consumption associated with continued park operations and visitor services. Although energy consumption in the park will continue into the future, overall consumption is expected to decrease with time as the park converts to more efficient types of equipment and fleet vehicle turnover occurs, resulting in the use of more technically advanced and energy-efficient vehicles.

Relationship of Short-Term Uses of the Environment and Long-Term Productivity

Under Alternative 1, the existing relationship of short-term uses of the environment and the maintenance and enhancement of long-term productivity would be expected to continue, with no change in current conditions. For example, ongoing impacts to the free-flowing condition of the river would be unchanged, and heavy traffic congestion during periods of peak visitor use would continue to require park personnel to help manage traffic flow and assist with visitor parking in Yosemite Valley.

The river corridor and management zoning for El Portal would allow for development of park administrative facilities within 56 acres of the corridor (primarily north of the river), only if it can be completed in a manner which protects the ORVs. The narrow river corridor provides the park greater flexibility to develop administrative facilities outside the river corridor, when compared to Alternatives 2 through 4, and a long-term benefit to overall park operations.

Responsiveness of Alternative 1 to the Ninth Circuit Court of Appeals' Direction on the Merced River Plan

The Ninth Circuit Court of Appeals (or the Court) directed the National Park Service to revise the Merced River Plan to address user capacity and to draw the boundaries in the El Portal segment in a manner that protects its ORVs. In addition, the District Court for the Eastern District of California directed the National Park Service to address how the Merced River Plan would amend the 1980 *General Management Plan.*

User Capacity

In addressing user capacity, the Ninth Circuit Court of Appeals specifically directed the National Park Service to "adopt specific limits on user capacity consistent with both the Wild and Scenic Rivers Act and the instruction of the Secretarial Guidelines and that such limits describe an actual level of visitor use that will not adversely impact the Merced's ORVs."

Under the No Action Alternative, the park would continue its existing user capacity program, which contains numerous specific, measurable limits on use. Most notable among these limits is the wilderness trailhead quota system and the associated wilderness impact monitoring system. The trailhead quota system applies to 53 of the 81 miles of the Merced River corridor. Under this system, overnight users of the wilderness must receive a permit for entry into wilderness areas. The total number of overnight users allowed in the Yosemite Wilderness (which includes large areas outside Merced River corridor) is 1,280 per day. This total number is apportioned over the various trailheads that lead into the park's wilderness areas. Specific trailhead quotas are reflected in table II-1. The Wilderness Impacts Monitoring System (WIMS) is also used to ensure protection of wilderness resources. Under WIMS, park staff conduct wilderness-wide inventory and monitoring studies focused on use-related impacts on campsites and trails. Data gathered from these studies are used to determine when, where, and why significant change occurs, and to provide a system for tracking those changes. It provides wilderness managers a system to help understand the relationship of natural conditions, visitor experience, and wilderness resource management. WIMS is also used to track the effectiveness of the wilderness trailhead quotas in preventing unacceptable human-caused changes. Information from WIMS has been used over the years to adjust the trailhead quotas as needed to protect wilderness resources.

Additional measurable limits on use of the Yosemite Wilderness include limits on party size. Overnight visitors in the wilderness may travel in groups of up to 15 if using established trails. Groups using cross-county routes are limited to 8 persons. Stock party size is limited to 25 head on existing trails, and stock may not travel off-trail except to feed and water. Day visitors into wilderness may travel in groups up to 35 on established trails, and groups up to 8 on cross-country routes.

Other specific, measurable limits on recreational uses of the river corridor are included in the Superintendent's Compendium. The maximum number of bicyclists in any one group is 30, and bicyclists are limited to paved roads and trails. (Bicycles are not allowed in the wilderness.) Fishing is prohibited along certain parts of the river corridor (e.g., swimming beaches), and catch limits apply to many types of fish. Boating restrictions included in the Compendium establish time frames and specific areas for use of nonmotorized boats on the portion of the river in east Yosemite Valley. Motorized boats are not allowed on any parts of the river under National Park Service management. Flotation devices are allowed on the Middle and South Forks of the Merced River, but their use is restricted in the Valley. Flotation devices may not be used in parts of the Yosemite Valley segment when water levels exceed a designated limit and when temperatures are below a designated limit.

The No Action Alternative also includes facility capacity limits and utility system capacity limits. Facility capacities in Yosemite Valley are designed to accommodate 18,241 visitors per day. Facility capacities for Wawona are designed to accommodate 3,035 visitors per day. These numbers were included in the 1980 *General Management Plan* as the goals for daily visitor use levels in these areas. The capacity of the El Portal wastewater treatment plant is currently set at 1 million gallons per day. This limit is established in the facility's operating permit issued by the California Regional Water Quality Control Board. All wastewater from the Valley, Gorge and El Portal segments of the river is treated at the El Portal wastewater treatment plant. The Wawona wastewater treatment facility has a permitted capacity of 105,000 gallons per day.

Under the No Action Alternative, the park could also implement temporary access restriction policies in Yosemite Valley. Under these policies, when traffic levels in the Valley reach a certain limit, the park temporarily restricts vehicular access into the Valley. (The traffic situations that trigger implementation of the Restricted Access Plan are described in Chapter II.) Similar temporary access restrictions can be implemented in the Wawona area when all day-use parking spaces are filled.

Finally, this alternative includes the other elements of the Merced River Plan, including management zoning and the River Protection Overlay. Zoning establishes limits on the type of facilities allowed in various areas, which in turn, relates to the number of people and the types of uses that would be expected in each area. The River Protection Overlay establishes stringent requirements on the development or redevelopment of facilities in the area closest to the river, which in turn, relates to the number of people and the types of use that would be expected in this area.

Although there are many specific, measurable limits on the types and levels of use of the river corridor under this alternative, the lack of a VERP program would likely not satisfy the requirements established by the Court for a user capacity program.

El Portal Boundary

The Court directed that the National Park Service "redetermine the river area boundaries at El Portal" and that these boundaries "must be drawn so as to protect and enhance the ORVs causing that area to be included within the Wild and Scenic River System."

In El Portal, Alternative 1 would retain a river corridor boundary that follows the 100-year floodplain or the River Protection Overlay, whichever is greater. Although this boundary does not encompass all of the identified ORVs for the segment, other existing elements of the Merced River Plan and other park policies and environmental regulations provide protection for these values. The zoning under this alternative would allow for development of park administrative facilities within the corridor (primarily north of the river), only if it can be completed in a manner which protects the ORVs.

All facility development proposed within the El Portal Administrative Site would require environmental compliance review, which would include a review of the proposed development's consistency with all elements of the Merced River Plan, including protection and enhancement of the ORVs.

Despite these existing protections, the boundary in Alternative 1 does not fully meet the Court's direction to redraw the boundaries to protect the ORVs.

Amendments to the 1980 *General Management Plan*

The Wild and Scenic Rivers Act requires the managing agencies to prepare comprehensive management plans for the river and its immediate environment. The Merced River Plan, adopted in November 2000, provides direction on these issues for the 81 miles of the Merced Wild and Scenic River under the jurisdiction of the National Park Service.

Congress further authorized the National Park Service to prepare its management plan for the river by making appropriate revisions to the park's 1980 *General Management Plan* (16 USC 1274[a][62]). The Wild and Scenic Rivers Act generally provides that river management plans "shall be coordinated with and may be incorporated into resource management planning for affected adjacent Federal lands" (16 USC 1274).

While it is not the policy of the National Park Service retroactively to revise existing plans, Section 1274(a)(62) of the Wild and Scenic Rivers Act requires that the *General Management Plan* be revised to meet the requirements of section 1274(b). Accordingly, the Merced River Plan adopted in November 2000 resulted in the following amendments to the *General Management Plan*. (For the purposes of the following analysis, the El Portal boundary and the VERP program were not included because those elements of the November 2000 plan were deemed invalid by the Court.) The Merced River Plan's management zoning, River Protection Overlay, river corridor boundaries and classifications, and the ORVs revise the *General Management Plan* by establishing more detailed land-use prescriptions that must be applied in future site-specific planning. The Merced River Plan's Section 7 determination process is a tool that augments the goals of the *General Management Plan*. No development or use of National Park Service lands in the areas within the river corridor shall be undertaken that is inconsistent with the Wild and Scenic Rivers Act designation of the Merced River, or that is inconsistent with the Merced River Plan.

General Management Plan Goals

The *General Management Plan* establishes five broad goals for managing Yosemite National Park (NPS 1980a, pp. 1–4). Although the *General Management Plan* is over 20 years old, its goals are still valid today and apply to the management of the Merced River corridor under the Merced River Plan. The Merced River Plan works in concert with the goals set forth in the *General Management Plan*, and outlines an additional set of specific goals for management of the Merced Wild and Scenic River (NPS 2000c, pp. 23-24). The Merced River Plan's five goals were developed to further the policy established by the Wild and Scenic Rivers Act, namely to preserve designated rivers in their free-flowing condition, and protect and enhance the river's ORVs. The five defining goals of the *General Management Plan* and the five goals of the Merced River Plan are intertwined, and no one goal can be emphasized to the complete exclusion of the others.

General Management Plan Management Objectives

The *General Management Plan* sets forth a number of Management Objectives that guide resource management, visitor use, and park operations (NPS 1980a, pp. 5-10). The elements of the Merced River Plan provide an added level of detailed guidance to park managers on how to achieve management objectives for the park. Those elements are boundaries (with the exception of El Portal), classifications, protection of ORVs, the Section 7 determination process, River Protection Overlay, and management zoning. For example, projects within the river corridor must protect and enhance ORVs and be consistent with the other elements of the Merced River Plan. Projects adjacent to the river corridor must protect ORVs, and depending on location, may need to undergo a Section 7 review if they affect the bed or banks of the river.

General Management Plan Land Management Zoning

The *General Management Plan* (NPS 1980a, pp. 10-13) specifies several land management zones, including a Development Zone. The management zones described in the Merced River Plan and the management zones proposed for the El Portal segment for Alternative 1 (see figure III-1) replace the Management Zoning Plan of the *General Management Plan* for those areas within the Merced Wild and Scenic River corridor boundaries. Zoning of areas outside the river corridor boundary remains unchanged; however, development and uses in areas adjacent to the river corridor must be protective of ORVs, as provided for in the Merced River Plan.

General Management Plan Visitor Use

The *General Management Plan* (NPS 1980a, pp. 15-19) establishes visitor use levels by limiting the number of overnight accommodations, campsites, and day-visitor parking spaces available. While this was a common method of regulating visitor use in 1980 when the *General Management Plan* was adopted, the Service-wide policy of the National Park Service is to use tools such as management zoning and VERP to manage appropriate types and levels of visitor use (National Park Service *Management Policies 2001*, p. 81). VERP, however, is not included in the No Action Alternative because the VERP program included in the November 2000 plan was not yet providing feedback regarding the status of ORVs. An aggregate figure for the river corridor could mask problems at hot spots and would not provide managers with useful guidance for addressing use-related problems potentially impacting ORVs.

For areas within the river corridor, this Revised Merced River Plan/SEIS revises the *General Management Plan* by adopting an array of specific measurable limits on the types and levels of use of the corridor and on facility and utility capacities. This user capacity program includes a network of mechanisms and methods that the National Park Service uses to address user capacity in the park, including specific limits on overnight use in wilderness areas, facility limits in day use areas, and other limits and restrictions as outlined in the Superintendent's Compendium. In addition to these specific measurable limits, park management uses other measures, such as management zoning and the River Protection Overlay, to direct visitor use and facility development in a manner that protects and enhances the ORVs and the free-flowing condition of the Merced River. The combination of these elements enables the National Park Service to administer the river corridor in a manner that protects and enhances the ORVs while allowing for appropriate levels of use and development.

General Management Plan Developed Area Plans

The *General Management Plan* (NPS 1980a, pp. 31-59) contains Developed Area Plans for areas within and adjacent to the river corridor. Development Concepts for areas within the river corridor must comply with the management elements of the Merced River Plan (boundaries, classifications, protection of ORVs, Section 7 determination process, River Protection Overlay, management zoning, and the park's user capacity management program). To the extent that any Development Concept is less restrictive than the Merced River Plan, the Merced River Plan controls. For the purposes of this No Action Alternative, the El Portal boundary and zoning map would not amend the *General Management Plan* because that boundary was deemed invalid by the Court. Actions adjacent to the river corridor but outside of the river boundary must also protect ORVs.

Table V-1 summarizes how Alternative 1 would affect the ORVs for each segment of the Merced River corridor.

Table V-1
Effect of Alternative 1 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 1 on the ORVs
	MAIN STEM MERCED RIVER SEGMENTS	
1 Wilderness	*Scientific* - These segments of the river corridor constitute a highly significant scientific resource because the watershed is largely within designated Wilderness in Yosemite National Park	*Scientific* – Alternative 1 would not affect the amount of the watershed which is within designated Wilderness. Alternative 1 would continue use of the trailhead quota system, along with implementation of VERP, to manage visitor use in designated Wilderness.
	Scenic – This segment includes views from the river and its banks of the glaciated river canyon, exposed bedrock riverbed, Merced Lake and Washburn Lake, the Bunnell Cascade, the confluence of tributaries, a large concentration of granite domes, and the Clark and Cathedral Ranges.	*Scenic* – Implementation of Alternative 1 would not affect the scenic views of the canyon, the riverbed, cascades, or rock formations from the river and its banks, as these views are not sensitive to visitor use impacts.
	Geologic Processes/Conditions – This segment traverses a U-shaped, glacially carved canyon separated by cascades and soda springs below Washburn Lake.	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by continuation of existing policies under Alternative 1.
	Recreation – This segment provides outstanding opportunities for solitude along the river, with primitive and unconfined recreation. There is a spectrum of levels of recreational use. River-related recreational opportunities include day hiking, backpacking, horseback riding and packing, camping, and enjoyment of natural river sounds Untrailed tributaries provide enhanced opportunities for solitude	*Recreation* – Under Alternative 1, visitor use of wilderness areas would continue to be managed under the existing trailhead quota system. Use of the trailhead quotas protects the opportunities for solitude by limiting the number of people in various areas of the wilderness, while providing opportunities for solitude and primitive, unconfined recreation, and a variety of river-related recreational opportunities in wilderness areas Thus, these measures protect the spectrum of recreation opportunities and the recreation ORVs.
	Biological – This segment includes a nearly full range of intact Sierran riverine environments, high-quality riparian, meadow, and aquatic habitats (such as the meadow at Washburn Lake), and special-status species such as mountain yellow-legged frog.	*Biological* – Under Alternative 1, visitor use of wilderness areas will continue to be managed under existing wilderness management programs (trailhead quota system, group size limits, etc.). These limits on visitor numbers and group sizes reduce the potential for degradation of sensitive biological resources, protecting the biological ORV.
	Cultural – This segment includes portions of a prehistoric trans-Sierra route in use for thousands of years and many prehistoric sites. There are many historic resources such as homestead sites, trails, river crossings, High Sierra Camp sites, and structures	*Cultural* – Under Alternative 1, visitor use of wilderness areas will continue to be managed under existing wilderness management programs (trailhead quota system, WIMS, etc.). Limits on the number of visitors accessing historic and cultural sites reduce the potential for damage to the sites. Therefore, the existing user capacity measures protect the cultural ORVs.
	Hydrologic Processes – The segment is characterized by a free-flowing river and excellent water quality. The river gradient drops from 13,000 to 6,000 feet in elevation. There are examples of natural conditions, including glacial remnants, a logjam in Little Yosemite Valley that is hundreds of years old, and numerous cascades.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character or its gradient, glacial remnants, or cascades. The continuation of existing wilderness management programs (trailhead quota system, WIMS, etc.) would protect water quality by limiting the number of visitors in areas with no visitor facilities. Therefore, existing user capacity methods protect the hydrologic processes ORVs.

Effect of Alternative 1 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 1 on the ORVs
Main Stem-Wilderness Summary		The implementation of existing user capacity measures, along with implementation of the elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, and the Section 7 determination process) would result in protection of the all of the Wilderness segment ORVs by limiting development or uses that would adversely affect the ORVs.
2. Yosemite Valley	*Scenic* – This segment provides magnificent views from the river and its banks of waterfalls (Nevada, Vernal, Illilouette, Yosemite, Sentinel, Ribbon, Bridalveil, and Silver Strand), rock cliffs (Half Dome, North Dome/Washington Column, Glacier Point, Yosemite Point/Lost Arrow Spire, Sentinel Rock, Three Brothers, Cathedral Rock, and El Capitan), and meadows (Stoneman, Ahwahnee, Cook's, Sentinel, Leidig, El Capitan, and Bridalveil). There is a scenic interface of river, rock, meadow, and forest throughout the segment.	*Scenic* – Implementation of Alternative 1 would not affect the scenic views of waterfalls and rock cliffs from the river and its banks. The continuation of existing user capacity measures, such as management zoning, would protect and enhance the scenic views of meadows and forests. Therefore, existing user capacity methods protect the scenic ORVs.
	Geologic Processes/Conditions – This segment contains a classic, glaciated, U-shaped valley, providing important examples of a mature meandering river; hanging valleys such as Yosemite and Bridalveil Creeks; and evidence of glaciation (e.g., moraines below El Capitan and Bridalveil Meadows).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 1.
	Recreation – This segment offers opportunities to experience a spectrum of river-related recreational activities, from nature study and sightseeing to hiking. Yosemite Valley is one of the premier outdoor recreation areas in the world.	*Recreation* – Implementation of Alternative 1 would continue existing user capacity measures, such as management zoning, to protect and enhance recreation in the Valley. Visitor levels would be managed through provision of appropriate levels of visitor facilities. Visitors would continue to have access to a spectrum of recreational opportunities.
	Biological – Riparian areas and low-elevation meadows are the most productive communities in Yosemite Valley. The high quality and large extent of riparian, wetland, and other riverine areas provide rich habitat for a diversity of river-related species, including special-status species, neotropical migrant songbirds, and numerous bat species.	*Biological* – Implementation of Alternative 1 would protect and enhance low-elevation meadows, wetlands, riparian areas and other riverine areas through management of visitor use in the Valley using existing user capacity measures, including facility limits and management zoning.
	Cultural – This segment contains evidence of thousands of years of human occupation reflected in a large number of archeological sites and continuing traditional use today. Nationally significant historic resources are found here, such as designed landscapes and developed areas, historic buildings, and circulation systems (trails, roads, and bridges) that provide visitor access to the sublime views of natural features that are culturally valuable.	*Cultural* – Implementation of Alternative 1 would protect and enhance cultural resources through management of visitor use in the Valley using existing user capacity measures, such as facility limits and management zoning.
	Hydrologic Processes – This segment is characterized by a meandering river, world-renowned waterfalls, an active flood regime, oxbows, unique wetlands, and fluvial processes.	*Hydrologic Processes* – Visitor use would not affect the Valley's spectacular waterfalls, or the river's meandering character, flood regime, or fluvial processes. Implementation of Alternative 1 would protect and enhance wetlands through management of visitor use in the Valley using existing user capacity measures, such as facility limits and management zoning.

Table V-1
Effect of Alternative 1 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 1 on the ORVs
Yosemite Valley Summary		The implementation of existing user capacity measures, along with implementation of the elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, and the Section 7 determination process) would result in protection of the ORVs of the Yosemite Valley segment by managing development and use in a manner that would protect and enhance the ORVs.
3 Gorge[a]	*Scenic* – This segment provides views from the river and its banks of the Cascades, spectacular rapids among giant boulders, Wildcat Fall, Tamarack Creek Fall, the Rostrum, and Elephant Rock.	*Scenic* – Implementation of Alternative 1 would not affect the scenic views of the Cascades, rapids, waterfalls, or rock formations from the river and its banks.
	Geologic Processes/Conditions – This segment is characterized by a classic V-shaped river gorge with a continuous steep gradient.	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 1.
	Recreation – This segment provides a spectrum of river-related recreational opportunities, such as picnicking, fishing, photography, and sightseeing.	*Recreation* – Implementation of Alternative 1 would continue existing user capacity measures, such as management zoning, to protect and enhance recreation in the Gorge. Visitor levels would be managed through provision of appropriate levels of visitor facilities and visitors would continue to have access to a spectrum of recreational opportunities.
	Biological – This segment is characterized by diverse riparian areas and associated special-status species that are largely intact and almost entirely undisturbed by humans.	*Biological* – Implementation of Alternative 1 would protect and enhance the diverse riparian areas and their associated special-status species through management of visitor use using existing user capacity measures, including facility limits and management zoning.
	Cultural – This segment contains cultural resources, including prehistoric sites and historic sites and structures such as those relating to historic engineering projects.	*Cultural* – Implementation of Alternative 1 would protect and enhance cultural resources through management of visitor use in the Gorge segment using existing user capacity measures, such as facility limits and management zoning.
	Hydrologic Processes – This segment is characterized by exceptionally steep gradients (2,000-foot elevation drop in approximately 6 miles).	*Hydrologic Processes* – These hydrologic processes are not sensitive to visitor use impacts, and would not be affected by Alternative 1.
Gorge Summary		The implementation of existing user capacity measures, along with implementation of the elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, and the Section 7 determination process) would result in protection of the ORVs of the Gorge segment by managing development and uses that would adversely affect the segment's ORVs.
4. El Portal	*Geologic Processes/Conditions* – This segment contains a transition from igneous to metasedimentary rocks (metasedimentary rocks are among the oldest in the Sierra Nevada).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, or to the proposed river corridor boundary and management zoning designations, and would not be affected by Alternative 1.
	***Recreation* – This segment provides a range of river-related recreational opportunities, in particular whitewater rafting and kayaking (class III to V) and fishing.**	***Recreation* – Implementation of Alternative 1 would protect and enhance recreation in El Portal through management of visitor use in El Portal using existing user capacity measures. The proposed El Portal boundary and the management zoning proposed would not affect access to a range of recreational opportunities.**

Table V-1
Effect of Alternative 1 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 1 on the ORVs
	Biological – This segment contains riverine habitats such as riparian woodlands and associated federal and state special-status species, including Tompkin's sedge and Valley elderberry longhorn beetle and its critical habitat (elderberry shrub). Expanses of north-facing habitat allow unlimited access to the riparian zone for wildlife species.	*Biological* – Implementation of Alternative 1 would protect and·enhance these biological resources through management of visitor use using existing user capacity measures. The proposed boundary and management zoning designations would protect biological resources by requiring protection of these resources during site planning, design and construction.
	Cultural – This segment contains some of the oldest archeological sites in the Yosemite area, as well as many historic Indian villages and traditional gathering places. River-related historic resources include structures related to early tourism and industrial development.	*Cultural* – Implementation of Alternative 1 would protect and enhance cultural resources through implementation of a boundary that incorporates cultural resources within a quarter-mile of the river. In addition, management of visitor use in El Portal and implementation of management actions under VERP, as needed, to address visitor-related impacts, will protect and enhance cultural resources.
	Hydrologic Processes – This segment is characterized by seasonally continuous rapids.	*Hydrologic Processes* – These hydrologic processes are not sensitive to visitor use impacts, and would not be affected by Alternative 1.
El Portal Summary		The implementation of existing user capacity measures, along with implementation of the elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, and the Section 7 determination process) would result in protection of the ORVs in the El Portal segment by managing development and uses that would adversely affect the segment's ORVs.
SOUTH FORK MERCED RIVER SEGMENTS		
5. Wilderness	*Scientific* – These segments of the river corridor constitute a highly significant scientific resource because the watershed is largely within designated Wilderness in Yosemite National Park	*Scientific* – Alternative 1 would not affect the amount of the watershed that is within designated Wilderness. Alternative 1 would continue use of the trailhead quota system to manage visitor use in designated Wilderness. This would protect the natural, cultural, and wilderness values and ensure that the river corridor continues to be a scientific resource.
	Scenic – This segment provides views from the river and its banks of unique river features, including large pothole pools within slickrock cascades, old growth forest, and meadows.	*Scenic* – Implementation of Alternative 1 would not affect the scenic views of pothole pools within slickrock cascades or old growth forest. Under Alternative 1, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quota system, WIMS, etc.). Implementation of these measures will protect meadows, old growth forests, and other sensitive areas from visitor use-related impacts.
	Geologic Processes/Conditions – This segment is characterized by glaciated valleys in the high country and V-shaped canyons above Wawona. Moraine meadows and soda springs above Gravelly Ford are also unique, river-related geologic features	*Geologic Processes/Conditions* – Most of these geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 1.
	Recreation – This segment provides outstanding opportunities for river-related solitude, enjoyment of natural river sounds, and primitive and unconfined recreation. This segment of the river is predominantly without trails, with the exception of four bridgeless trail crossings in the upper reaches of the segment.	*Recreation* – Under Alternative 1, visitor use of wilderness areas would continue to be managed under the existing trailhead quota system. This system would protect the opportunities for solitude by limiting the number of people in wilderness areas, while providing for primitive, unconfined recreation

Table V-1
Effect of Alternative 1 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 1 on the ORVs
	Biological – This segment includes a nearly full range of riverine environments typical of the Sierra Nevada. Examples of river-related federal and state special-status species include Wawona riffle beetle and mountain yellow-legged frog.	*Biological* – Under Alternative 1, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quota system, WIMS, etc.). These programs protect the riverine communities and special-status species from visitor use-related impacts.
	Cultural – This segment includes river-related prehistoric sites and resources and reflects historic stock use and cavalry activities.	*Cultural* – Under Alternative 1, visitor use of wilderness areas will continue to be managed under existing wilderness management programs (trailhead quotas, WIMS, etc.). These measures protect cultural resources from visitor use-related impacts by limiting access to them.
	Hydrologic Processes – This segment is characterized by a free-flowing river and excellent water quality.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character. Water quality in wilderness areas will be protected under Alternative 1 through existing limits on visitor use in wilderness.
South Fork-Wilderness Summary		The implementation of existing user capacity measures, along with implementation of the elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, and the Section 7 determination process) would result in protection of the ORVs of the Wilderness segment by managing development and uses that would adversely affect the segment's ORVs.
6. Impoundment[b]	*Scenic* – This segment provides views from the river and its banks of the river and Wawona Dome.	*Scenic* – Implementation of Alternative 1 would not affect the scenic views of the river or Wawona Dome.
	Hydrologic Processes – This segment has excellent water quality.	*Hydrologic Processes* – Water quality would be protected under Alternative 1 through existing user capacity programs including limits on facilities and management zoning. These measures protect water quality by limiting access and use of the impoundment area.
Impoundment Summary		The implementation of existing user capacity measures, along with implementation of the elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, and the Section 7 determination process) would result in protection of the ORVs of the Impoundment segment by managing development and uses that would adversely affect the segment's ORVs.
7. Wawona	*Scenic* – This segment provides views from the river and its banks of Wawona Dome.	*Scenic* – Implementation of Alternative 1 would not affect the scenic views of the river or Wawona Dome.
	Recreation – This segment offers opportunities to experience a spectrum of river-related recreational activities, from nature study and photography to hiking.	*Recreation* – Implementation of Alternative 1 would protect and enhance recreation in Wawona through continuation of existing user capacity management, through limits on facilities and management zoning. Visitors would continue to have access to a spectrum of recreational activities.
	***Biological* – This segment contains a diversity of river-related species, wetlands, and riparian habitats. There are federal and state special-status species in this segment, including the Wawona riffle beetle.**	***Biological* – Implementation of Alternative 1 would protect and enhance wetlands, riparian habitats, and special-status species through management of visitor use under existing policies, such as facility limits and management zoning.**

Table V-1
Effect of Alternative 1 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 1 on the ORVs
	Cultural – This segment contains evidence of thousands of years of human occupation, including numerous prehistoric and historic Indian villages, historic sites, structures, and landscape features related to tourism, early Army and National Park Service administration, and homesteading.	*Cultural* – Implementation of Alternative 1 would protect and enhance cultural resources through management of visitor use using existing measures, such as management zoning and limits of facilities.
Wawona Summary		The implementation of existing user capacity measures, along with implementation of the elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, and the Section 7 determination process) would result in protection of the ORVs of the Wawona segment by managing development and uses that would adversely affect the segment's ORVs.
8. Below Wawona	*Scenic* – This segment provides views from the river and its banks of continual whitewater cascades in the deep and narrow river canyon in a untrailed, undisturbed environment.	*Scenic* – Implementation of Alternative 1 would not affect the scenic views of whitewater cascades or untrailed, undisturbed environment.
	Geologic Processes/Conditions – This segment contains a transition from Paleozoic Era igneous to Cretaceous Period metasedimentary rocks (metasedimentary rocks are among the oldest in the Sierra Nevada).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 1.
	Recreation – This segment provides outstanding opportunities for river-related solitude, enjoyment of natural river sounds, and primitive and unconfined recreation in an untrailed, undisturbed environment. River-related recreational opportunities include hiking, fishing, and whitewater kayaking.	*Recreation* – Implementation of Alternative 1 would protect and enhance recreation in the Wawona through management of visitor use using existing measures, such as management zoning and limits on facilities. Visitors would continue to have access to a spectrum of recreational opportunities.
	Biological – This segment is characterized by diverse riparian areas that are intact and largely undisturbed by humans. River-related federal and state special-status species in this segment include the Wawona riffle beetle.	*Biological* – Implementation of Alternative 1 would protect riparian areas and special-status species through management of visitor use using existing measures, such as management zoning and limits on facilities.
	Cultural – This segment contains archeological sites and historic resources such as trail segments representing early cavalry activity.	*Cultural* – Implementation of Alternative 1 would protect and enhance cultural resources through management of visitor use using existing measures, such as management zoning and limits on facilities.
	Hydrologic Processes – This segment is characterized by a free-flowing river with continual whitewater cascades.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character and whitewater cascades.
Below Wawona-Summary		The implementation of existing user capacity measures, along with implementation of the elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, and the Section 7 determination process) would result in protection of the ORVs of the Below Wawona segment by managing development and uses that would adversely affect the segment's ORVs.

NOTES

[a] The Cascades Diversion Dam was removed in 2004 The segment that was formerly designated as 3a has been combined with the segment formally designated 3b and this entire area forms segment 3

[b] The Impoundment would become part of segment 7, Wawona, if an alternative water source for the area was secured and the impoundment was removed.

Alternative 2: VERP Program with Interim Limits

The environmental consequences analysis for this alternative addresses elements of the user capacity program for the entire Merced River corridor and the river corridor boundary and associated management zone prescriptions for the El Portal segment that have been specifically identified in Alternative 2. It does not provide an analysis of impacts that may be associated with elements of the park's existing user capacity programs as identified in Alternative 1. Similarly, this analysis does not address other existing management elements for the Merced River corridor that have been previously described and analyzed in the existing Merced River Plan/SEIS.

Natural Resources

Geology, Geohazards, and Soils

Analysis

The following discussion provides an overview of the types of impacts that could occur under Alternative 2 with respect to rockfall hazards, seismic hazards, and soils.

Rockfall Hazards. Under Alternative 2, rockfall hazards would remain essentially the same as described for Alternative 1, with the possible exception that management actions taken in response to indicators unrelated to rockfall hazard under the VERP program could reduce number of users in some areas that are prone to rockfall hazards. Along the Merced River, rockfalls can occur in the upper wilderness reaches, along the edges of Yosemite Valley, within the river gorge, and along the South Fork where the river is contained within canyons. Current park management policies and the *Yosemite Valley Geologic Hazard Guidelines* (Appendix C in NPS 2000e), which require most new facilities and uses to be placed outside the talus zone and the rockfall shadow zone, would continue to be implemented, as under Alternative 1. Although interim facility limits would be in effect until the VERP program under Alternative 2 was fully implemented, it is expected that in the near term, visitation levels would be similar to existing levels under Alternative 2 as under Alternative 1.

In addition to current management programs and policies, the interim limits with VERP program implemented under Alternative 2 provides for management actions that would be triggered to achieve or maintain established standards. Some of these management actions would likely have the effect of limiting users in some areas. As a result, in the long term, implementation of the interim limits with VERP program under Alternative 2 could slightly reduce visitation levels compared with future, long-term visitation levels under Alternative 1. This would, in turn, result in a slightly lower number of users exposed to rockfall hazards, and therefore would be a beneficial, albeit negligible, effect of this alternative.

Seismic Hazards. Potential seismic hazards in the Merced River corridor would be the same under Alternative 2 as described for Alternative 1.

As described for Alternative 1, the current park management policies and the *Yosemite Valley Geologic Hazard Guidelines* would continue to be implemented. Although interim facility limits would be in effect until the VERP program under Alternative 2 was fully implemented, it is expected that in the near term visitation levels would be similar under Alternative 2 as those under Alternative 1. The interim limits with VERP program implemented under Alternative 2, in addition to current management programs and policies, provides for management actions that would be triggered to achieve or maintain established standards. Some of these management actions would have the effect of limiting users in some areas. As a result, in the long term, implementation of the interim limits with VERP program under Alternative 2 could slightly reduce the increase in visitation levels that could reasonably be expected to occur under Alternative 1. This would, in turn, result in a slightly lower number of users exposed to earthquake hazards, and therefore would be a beneficial, albeit negligible, effect of this alternative.

Impacts to Soils. Existing park management policies would continue to be implemented, as under Alternative 1. Although interim facility limits would be in effect until the VERP program under Alternative 2 was fully implemented, it is expected that visitation levels effects on soils would be similar to existing levels in the short term. In the long term under Alternative 2, the interim limits with the VERP program would monitor specific indicators and standards and implement management actions that could directly or indirectly protect soils from compaction and erosion in those areas of the river corridor zoned for high use. Management actions to protect and restore soils would include temporary site closures, redirection of visitors away from sensitive resources, trail removal/restoration, trail realignment, signage, education, and other actions as indicated by onsite conditions/variables. These actions would have short-term, minor, adverse effects during implementation, but the overall effects would be beneficial, moderate to major, and potentially long term. For example, hand tools could be used to loosen the topsoil of a social trail through a meadow, which could initially cause soil disturbance to a depth of a few inches but would promote site recovery the long term.

Under Alternative 2, as under Alternative 1, visitor use could continue to affect soils by contributing to erosion, soil compaction, and removal of surface soils. Excessive surface water runoff or loss of protective vegetation cover could cause erosion. Compaction of native soils could occur through concentrated visitor use in localized areas, or excessive vehicle traffic in unpaved areas. In the long term, compared to Alternative 1, monitoring and management actions to achieve or maintain the relevant VERP standards would reduce adverse impacts to soils in the river corridor.

Management actions associated with the redirection of visitors from floodplains and adjacent areas and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection are expected to be negligible to minor, and adverse.

The Merced River corridor in Alternative 2 for the El Portal segment is based on a quarter-mile wide boundary on both sides of the river. The zoning for this alternative provides the potential for much of the land north of the river (zoned for Park Operations and Administration [3C]) to be used for administrative purposes. Except for the Trailer Village/Abbieville area and a small area at the Murchison structures, which are zoned 3C, portions of the area south of the river is zoned for Day Use (2C) and Open Space (2A). In addition, under Alternative 2 the Sand Pit area west of the Murchison structures would be restored.

As with Alternative 1, future construction of administration facilities as allowed under this boundary and zoning could cause erosion of exposed soil. Temporary construction-related erosion could occur during periods of rain, while soil is exposed, and prior to the site restoration and cleanup phases of the future projects. Erosion and soil loss typically occur immediately after initial site grading or following construction or a fill slope with exposed soil. Future construction activities could also result in soil disturbance, which represents a localized, minor, long-term, adverse impact to soils in El Portal in 3c zones. As described under Alternative 1, impacts associated with construction-period soil erosion and sedimentation would be mitigated through preparation and implementation of a stormwater pollution prevention plan. Therefore, erosion and soil loss associated with grading and construction activities would result in a local, short-term, minor, adverse impact. Long-term soil degradation would be minimal due to erosion controls and the intermittent nature of the grading activities. Therefore, compared to Alternative 1, Alternative 2 would have similar effects on soil erosion from future construction activities at the El Portal Administrative Site.

Day Use (2C) zoning south of the river suggests that management actions would facilitate user access, which could increase impacts on soils. However, any such management action would be implemented in such a manner to reduce adverse effects on soils. Implementation of the VERP program within the proposed El Portal boundary would ensure that management actions would achieve or maintain established standards with respect to trails, riverbank erosion, vegetation, and other indicators. Compared with Alternative 1, this would be a long-term, minor, beneficial impact.

Activities in the 2A zoned area south of the river would be very limited due to difficulty accessing this area, as well as the limited amount and types of activities allowed in this zone. As a result, impacts to soils in this area are expected to be negligible.

Summary of Alternative 2 Impacts. In the short term, impacts related to rockfall and seismic hazards would be unchanged from Alternative 1 because the number of users exposed to these hazards would be approximately the same. In the long term, fewer users would be exposed to rockfall hazards under Alternative 2 than under Alternative 1 due to slightly lower visitation levels. In the long term, slightly fewer visitors would be exposed to earthquakes and associated seismic hazards under Alternative 2; therefore, compared to Alternative 1, Alternative 2 would have a negligible, beneficial impact on public safety associated with seismic hazards. Compared to Alternative 1, Alternative 2 would have similar effects on soil erosion from future construction activities at the El Portal Administrative Site. However, efforts to protect biological and recreation ORVs through implementation of the interim limits with VERP program, including management actions taken to achieve the identified standards, would have a long-term, minor, beneficial impact on soil resources, especially in management zones supporting additional development. The combined adverse and beneficial impacts to soil resources, compared with Alternative 1, would be long term, minor, and beneficial.

Alternative 2 would continue to enhance and protect the identified geologic processes/conditions ORVs within the individual river segments.

Cumulative Impacts

The effects of the cumulative projects would be the same as those identified and described under Alternative 1. Although rockfalls and earthquakes are unpredictable and unavoidable by nature, rockfall and earthquake hazards under Alternative 2 and the cumulative projects would result in a local, long-term, minor, beneficial impact to public safety in Yosemite National Park and the El

Portal Administrative Site. The beneficial impact would be due to a slightly smaller increase in long-term visitation level, compared to Alternative 1 (thus exposing fewer visitors to rockfall and seismic hazards) and to efforts by the National Park Service to relocate critical facilities outside the talus and rockfall shadow zones, to avoid construction of new facilities in these hazard areas, and to conduct appropriate geotechnical studies prior to construction of facilities on soils susceptible to seismic ground shaking. The cumulative projects, in combination with Alternative 2, would result in a net regional, long-term, minor, beneficial impact on soil resources.

Impairment

Compared with Alternative 1, Alternative 2 would have a local, long-term, minor, beneficial impact on geologic resources and soils. Therefore, Alternative 2 would not impair geologic resources for future generations.

Hydrology, Floodplains, and Water Quality

Analysis

The following discussion provides an overview of the types of impacts to hydrology, floodplains, and water quality that could occur within each segment of the Merced River corridor under Alternative 2.

Management actions associated with the redirection of visitors from floodplains and adjacent areas and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection are expected to be negligible to minor, and adverse.

Impacts in Wilderness. The hydrologic processes ORVs in the Wilderness segments include the river's free-flowing character and excellent water quality. The ORV description also notes the river gradient, the natural conditions (glacial remnants, a logjam in Little Yosemite Valley), and numerous cascades. Of the qualities described in the ORV, most are relatively insensitive to user-related impacts, with the exception of water quality. Water quality in Wilderness segments is considered to be excellent.

User capacity within wilderness areas of Yosemite National Park is addressed through trailhead quotas and monitoring of wilderness resource conditions. Implementation of the VERP program for the wilderness areas would result in additional monitoring of indicators within wilderness areas. VERP indicators to be monitored in wilderness zones are listed in table II-5.

Indicators have been selected to provide overall information on the health of resources within the area. Information on the numbers of people recreating within the river corridor, and the River Protection Overlay in particular, can provide indirect information on the potential for increased erosion and sedimentation. Monitoring water quality would help determine the effects of visitor use in designated overnight areas on water quality. The water quality standard for this area includes nondegradation for fecal coliform (which must also meet the state standard for recreational contact), nutrients (compounds of nitrogen and phosphorous), and total petroleum hydrocarbons. If these water quality standards are not met, management actions would be implemented to improve water quality parameters to a level that meets the established standard and protects and enhances this ORV.

The continued/ongoing removal of up to 3,000 gallons of water per day from the Merced River to support functions at the Merced Lake High Sierra Camp during the summer (when this camp is open to the public) represents a negligible impact to the river's hydrologic processes at or downstream of the point of withdrawal. This impact is negligible due to the small amount of water withdrawn on a daily basis, taking into consideration overall flow volumes of the river in this area.

Management actions taken in response to VERP monitoring data on water quality and levels of use within the river corridor and River Protection Overlay could range from less restrictive measures (visitor education efforts) to more restrictive measures (increased enforcement of existing regulations, restrictions on certain activities such as stock use, restrictions on the level of use, closure of certain areas). Educational efforts could include requiring visitors to view additional printed or video information prior to receiving a wilderness permit. More intensive measures could include increased law enforcement in wilderness areas to ensure that visitors comply with setbacks on campsites and other restrictions. Finally, the most restrictive measures could include limiting use through reduced wilderness trailhead quotas and closure of some areas. The park could also implement restoration of riparian vegetation in areas closed due to visitor-related impacts.

The impacts of the management actions as a result of implementing an interim limits with VERP program would vary depending on the action taken. Management actions such as visitor education would be expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, and water pollution. Education efforts would be expected to result in local, short- and long-term, negligible to minor, beneficial impacts on hydrology and water quality. More restrictive measures, such as the reduction of trailhead quotas or restrictions on stock use, could have beneficial effects due to reduced trampling of vegetation by people and stock, reduced soil compaction, and reduced waste loads. These actions would be expected to result in local, long-term, minor to moderate, beneficial impacts on hydrology and water quality. Finally, measures taken to close and/or restore areas would be expected to result in local, long-term, minor to moderate, beneficial effects on water resources associated with restoration of vegetative cover, reduced soil compaction, and reduced erosion.

In wilderness areas, few structures are permitted to be constructed, and Alternative 2 would not affect the floodplain or its ability to accommodate flood flow.

Visitation to the Wilderness segments of the river corridor is seasonal in nature and is controlled through the park's trailhead quota system. There is some existing, unused capacity within this quota system, which would allow for slight increases in wilderness use in the future. Such use would not be allowed to exceed Wilderness trailhead quota limits or violate VERP standards under Alternative 2. As such, continued implementation of the park's Wilderness and Impact Monitoring System (WIMS), supplemented by the implementation of the VERP program, would have local, long-term, negligible to minor, beneficial impacts on hydrology, water quality, and the hydrologic processes ORV.

Impacts in Yosemite Valley. The hydrologic processes ORV in Yosemite Valley includes the river's meandering character, world-class waterfalls, an active flood regime, oxbows, unique wetlands, and fluvial processes. Many of these qualities are insensitive to user-related impacts and instead are more directly affected by development within the floodplain. User-related impacts could affect wetlands and other vegetation within the river corridor, which could result in the loss of vegetative cover and increased erosion and sedimentation. In addition, visitor use of the river and use of camping and parking areas near the river could result in increased water pollution through stormwater runoff and other means.

Indicators for the few areas zoned as Wilderness in Yosemite Valley would be the same as described above for wilderness areas.

Interim limits associated with this alternative would serve to keep use levels no higher than current levels, with the exception of camping and buses. This alternative will allow for an increase in 163 campsites and 92 buses per day. The VERP standard and indicators for various zones in the Valley are listed in table III-5. VERP indicators directed at hydrologic resources and water quality include riverbank erosion, parking capacity and water quality testing. Monitoring would provide a suite of data to help ensure that hydrologic processes ORVs are protected. If monitoring of the VERP indicators shows that standards for these indicators are not being met, management actions would be taken to remedy the situation. Management actions could include visitor education, restricting access to sensitive areas, restricting or limiting activities (swimming, picnicking, etc.) in specific areas, or construction of boardwalks to allow access to sensitive areas while protecting the natural resources. Management actions could also include visitor redirection, and the closure and restoration of areas adversely affected by trampling and erosion. Management actions could differ depending upon which zone(s) are affected. Management actions are more likely to restrict levels and types of visitor use in areas zoned Open Space (2A) because these areas are typically more sensitive to visitor impacts and are managed for lower visitor concentrations. Management actions taken to address standards in zones Day Use (2C) and Camping (3A), Visitor Base and Lodging (3B), and Park Operations and Administration (3C) could focus more on education and site hardening, as these areas have been identified as being appropriate for higher levels of visitor use.

The effects of these management actions in Yosemite Valley would vary by the action taken. Educational measures designed to change visitor behaviors in ways that reduce vegetation trampling, riverbank erosion, and water pollution are expected to result in local, short- and long-term, negligible to minor, beneficial effects. More restrictive measures, such as limits on activities near the river or reduced activity levels, are also expected to reduce the loss of vegetative cover, soil compaction, soil erosion, and water pollution, resulting in local, short- and long-term, minor benefits to hydrology and water quality. Closure and restoration of riparian areas is expected to result in local, long-term, minor to moderate benefits to hydrology and water quality. Site-hardening activities, such as construction of boardwalks or picnic facilities, could have local, short-term, adverse effects related to soil disturbance, soil compaction, and erosion and sedimentation associated with construction activities. The long-term effects associated with boardwalks is expected to be local, minor to moderate, and beneficial due to reduced trampling in sensitive vegetated areas and reduced impacts to surface and groundwater hydrology related to the creation of social trails, compacted soils, and trampled vegetation in riverside areas. Construction of picnic areas or other day-use facilities is also expected to reduce ongoing trampling and water pollution, but could have long-term effects related to soil compaction and vegetative losses. Thus, the long-term benefits of these facilities on water resources is expected to be negligible to minor. Floodplains and their ability to accommodate flood flows would not be substantively affected by most management actions. Construction of boardwalks or other day-use facilities, which would be required to comply with floodplain guidance and the other elements of the Merced River Plan, would have local, long-term, negligible, adverse effects on floodplains.

Overall, Alternative 2 would prevent visitor use from adversely affecting ORVs. This would result in a long-term, minor, beneficial impact to hydrology, water quality, and hydrologic processes in the Yosemite Valley segment. Impacts on floodplains would be negligible.

Impacts in the Gorge. The hydrologic processes ORV for the Gorge segment is related to the steep gradient of the river. The river in the Gorge is, in most places, difficult for visitors to safely access and has limited or no floodplain areas. This ORV is not readily susceptible to user-related impacts, and thus the river's gradients would be protected under Alternative 2.

Several indicators and standards have been developed that are associated with the hydrologic processes ORV (see table III-5), and monitoring would provide data to help ensure that this ORV is protected. The effects of VERP management actions within the Gorge segment would vary by the action taken. Educational measures would result in local, short- and long-term, negligible to minor, beneficial effects. If more restrictive measures were needed in the future, (such as limits on activities near the river or reduced activity levels), these would reduce the loss of vegetative cover, soil compaction, soil erosion, and water pollution, resulting in local, short- and long-term, minor benefits to hydrology and water quality. Closure and restoration of riparian areas would result in local, long-term, minor to moderate benefits to hydrology and water quality. Site-hardening activities would only be considered only within the small areas zoned Attraction (2D) or Park Operations and Administration (3C) and would have to comply with the other Merced River Plan elements. Within these small areas, site hardening such as construction of parking or picnic facilities, could have local, short-term, adverse effects related to soil disturbance, soil compaction, and erosion and sedimentation associated with construction activities. These facilities would be located in areas designated for higher intensity uses and the long-term effects associated with site improvements is expected to be local, minor, and beneficial.

Overall, Alternative 2 is expected to have local, long-term, negligible to moderate, beneficial impacts on hydrology and water quality. Since the floodplain in the Gorge segment is very narrow and the hydrologic processes ORV for the segment is not readily susceptible to visitor use-related impacts, effects on floodplains are expected to be negligible, and there would be no change to the hydrologic processes ORV.

Impacts in El Portal. The hydrologic processes ORV for the El Portal segment is related to the seasonally continuous rapids in that segment. This ORV is not readily affected by the redrawing of the river corridor boundary, the zoning plan, or visitor use. Seasonally continuous rapids would continue to exist and be protected under Alternative 2.

Under this alternative, the quarter-mile river corridor on either side of the river, along with its management zone prescriptions, allows for a higher level of protection for this segment then that identified for Alternative 1, resulting in a long-term minor beneficial impact to the floodplain and the hydrologic processes ORV in this segment when compared to Alternative 1. This alternative includes 411 acres zoned for Park Operations and Administration (3C). This could result in a loss of vegetation, soil compaction and/or paving, the potential for increased erosion, and increased runoff from developed areas resulting in local, long-term, minor, adverse effects on hydrology and water quality. In addition, some development could occur within the floodplain, resulting in a local, long-term, minor, adverse effect on floodplain values. These minor adverse effects would be minimized through careful site design; Best Management Practices to limit vegetation loss, soil compaction, and erosion; and implementation of appropriate stormwater treatment measures.

Implementation of VERP within this segment would include monitoring of various indicators for each zone, which would provide data on the current status of ORVs and help ensure their protection. Management actions to address standards being exceeded would differ between zones because areas zoned 2C are designated for day use (192 acres) and areas zoned 2A are designated for open space (250 acres). Areas zoned 3C (411 acres) are designated for higher intensity use that could include facilities associated with park operations and administration. Management actions to address noncompliance with established standards could include educational efforts for employees and visitors, restrictions on uses within the river, closure and restoration of areas, or construction of improvements such as boardwalks, day-use facilities, or stormwater treatment systems.

The effects of management actions would vary by the action taken. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures, such as limits on activities near the river or reduced activity levels, is expected to reduce the loss of vegetative cover, soil compaction, soil erosion, and water pollution, resulting in local, short- and long-term, minor benefits to hydrology and water quality. Closure and restoration of riparian areas is expected to result in local, long-term minor to moderate, benefits to hydrology and water quality. Site hardening would be considered within areas zoned 3C only. Site hardening, such as construction of parking or picnic facilities, could have local, short-term, adverse effects related to soil disturbance, soil compaction, and erosion and sedimentation associated with construction activities. However, these facilities would be located in areas designated for higher intensity uses and would likely reduce the unofficial use of areas designated for less-intensive use. Therefore, the long-term effects associated with site improvements are expected to be local, minor, and beneficial. Effects on floodplains would primarily be related to construction activities within the floodplain. Since these activities would be expected to comply with floodplain requirements, effects on floodplains and the ability to accommodate flood flow is expected to be adverse but negligible.

Impacts in Wawona. The impoundment near Wawona is described as having excellent water quality, a hydrologic processes ORV. The Wawona segments themselves do not represent a hydrologic processes ORV, but the Below Wawona segment includes the free-flowing condition of the river and continual whitewater cascades, which are ORVs. These ORVs are not readily susceptible to impacts from visitors. The water quality element of the Impoundment segment is the most susceptible to user-related impacts. Under the VERP program, water quality would be monitored.

Typical management actions that might be taken under VERP have been described above. In general, the less restrictive measures would have short- and long-term, negligible to minor, beneficial impacts. More restrictive measures are expected to result in long-term, minor to moderate benefits. Management actions that include construction could have local, short-term, minor, adverse effects on hydrology and water quality and long-term, negligible, adverse effects on floodplains. These activities would be designed to reduce effects on sensitive areas within the segment, and thus would be expected to have long-term, minor, beneficial effects.

Overall, Alternative 2 is expected to have local, long-term, negligible to moderate benefits to hydrology, water quality, and the hydrologic processes ORV. Adverse effects to floodplains from any construction activities would be local, long term, and negligible.

Summary of Alternative 2 Impacts. Overall, implementation of the VERP program, based on the management zoning prescribed for the river corridor, would result in a long-term, minor, beneficial impact on hydrology, water quality, and hydrologic processes throughout the river corridor and a long-term, negligible, adverse effect on floodplains in the Valley and developed areas in Wawona and El Portal. This, coupled with existing park management policies and existing elements of the Merced River Plan, will help to ensure that the hydrologic processes ORVs would continue to be protected and enhanced on a segment-by-segment basis within the Merced River corridor.

Cumulative Impacts

The effects of the cumulative projects on hydrology, floodplains, and water quality would be the same as described under Alternative 1.

Overall, past, present, and reasonably foreseeable cumulative actions, in combination with Alternative 2, could have a long-term, minor, beneficial effect on hydrology, floodplains, and water quality in the Merced River corridor.

Impairment

Alternative 2 would result in long-term, minor, beneficial impacts to water quality, floodplain values, and hydrologic processes in the Merced River corridor. As a result, Alternative 2 would not impair the hydrologic resources of the park for future generations.

Wetlands

Analysis

The following discussion provides an overview of the types of impacts to wetland resources that could occur within each segment of the Merced River corridor under Alternative 2. Biological ORVs common to the entire Merced River (main stem and South Fork) include riverine habitats, such as riparian forests, meadows, and the aquatic environment. In the short term under Alternative 2, park use would generally continue consistent with existing conditions. In the long term, implementation of Alternative 2 could decrease visitor numbers compared to Alternative 1 due to the potential limitations on park access that could result from VERP monitoring and management actions.

Current park management tools, including the Merced River Plan management zoning and a variety of policies and guidelines pertaining to sensitive wetlands, provide mechanisms for implementing protective actions. Interim facilities limits (as described in Chapter III) would serve, for the most part, to manage user capacity at existing levels until the VERP program was fully implemented. Interim limits would, however, allow short-term growth in bus traffic, campground facilities, and employee housing, resulting in a potential for minor, adverse impacts on wetland resources in localized areas. Potential growth in bus traffic is expected to have a negligible to minor adverse effect on wetlands, because these visitors tend to focus use at site hardened areas, such as Yosemite Lodge and Lower Yosemite Falls.

Implementation of the VERP program would provide data on the condition of resources to guide future management decisions regarding visitor use. For example, monitoring might show that wetlands at specific locations (i.e., near facilities or other high-use areas such as trails) were being negatively affected by human or stock use, or through habitat fragmentation, local degradation of water quality or introduction, or the spread of invasive plant species. VERP monitoring could result in beneficial effects on wetland resources by, for example, localizing facility- and use-related impacts away from more sensitive areas or reducing user capacity limits.

Implementation of the VERP monitoring and management program would provide a powerful tool for systematically monitoring effects of visitor use on sensitive resources, adding a further level of protection that would not be available under Alternative 1.

If the park took management actions associated with the redirection of visitors from wetlands to other areas outside of the Merced River corridor there could be adverse effects on resources outside the corridor. However, visitors would be directed to areas better able to withstand the use and the redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term and variable in location. Therefore, potential impacts to resources in other areas of the park as a result of redirection are expected to be negligible to minor, and adverse. If instead the park took action in response to VERP that decreased overall visitor numbers, there would not be new impacts to areas outside the corridor.

Impacts in Wilderness. As with Alternative 1, wilderness trailhead quotas would remain in place under Alternative 2. User capacity would be further limited under Alternative 2 by the prohibition of new campgrounds and trails under the interim facilities limits for wilderness areas until the VERP program was fully implemented. In addition to the existing wilderness monitoring program under Alternative 1, long-term implementation of the VERP program in Wilderness segments would provide additional resource-specific data on the condition of resources that would inform future management decisions. Some of the VERP indicators described in Chapter II have been selected to provide overall information on the health of wetland resources throughout the river corridor. If monitoring data showed that wetlands were being negatively affected by visitor use, then a wide range of management actions could be implemented to improve resource conditions to a level that would meet the established standards.

Management actions implemented in response to VERP monitoring data for wetland-related indicators could include educating visitors on the effects of riverbank erosion and social trails on riparian wetlands, closing and restoring wetlands along social trails, or temporarily or permanently closing highly degraded or sensitive areas for restoration or conservation. The number of visitors to a given area could be limited by reducing wilderness trailhead quotas or enacting seasonal restrictions on access to portions of the river corridor.

The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken. Low-intensity management responses, such as educational efforts, would likely result in local, long-term, negligible to minor, beneficial effects on wetland resources. Higher intensity management responses, such as temporarily or permanently closing highly degraded or sensitive areas or restoring wetlands along social trails or eroded riverbanks would likely result in local, long-term, minor, beneficial effects on wilderness wetlands and the biological ORVs for the Wilderness segments of the Merced River.

Under Alternative 2, implementation of interim facilities limits and the VERP program within Wilderness segments, in combination with the wilderness trailhead quota system and application of the management elements adopted under the Merced River Plan would have an overall local, long-term, minor, beneficial effect on wetlands and the biological ORVs in Wilderness segments compared to Alternative 1.

Impacts in Yosemite Valley. Under Alternative 2, user capacity in the Valley would be managed through interim facility limits until full implementation of the VERP program. The existing user capacity program elements described for Alternative 1 would also be used under this alternative. The interim facility limits would generally maintain park visitation at current levels. Exceptions in the Valley include a limit on tour buses that would be higher than the current average and a potential increase in campsites, which would still provide fewer campsites than existed prior to the January 1997 flood. Although a potential increase in tour buses and campground facilities could serve to bring more visitors into the park in the short term, the effects on wetland resources are expected to be negligible to minor and adverse. Increased camping facilities would have a negligible impact to wetlands, though the potential increase in visitors associated with the increased facilities could have a long-term, minor, adverse impact to wetlands in some meadow and floodplain areas. Moreover, the slight increase in visitation due to these increases would be limited to the short summer season when campgrounds are most occupied. Potential tour bus increases would likely have a negligible to minor impact on wetlands as these visitors typically use site-hardened areas, such as Yosemite Lodge and Lower Yosemite Falls; however, long term, minor adverse impacts could occur at areas such as El Capitan meadow, where tour buses stop for views of El Capitan. Compared to Alternative 1, implementation of the VERP program in the Valley would result in additional resource-specific monitoring. Management actions implemented in response to VERP monitoring are described in detail in Chapter III and could range from educating visitors to temporarily or permanently closing areas for restoration or conservation.

The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken. Low-intensity management responses, such as educational efforts, would likely result in local, long-term, minor, beneficial effects on wetland resources. Higher intensity management responses, such as temporarily or permanently closing areas or restoring wetlands along social trails or eroded riverbanks, are expected to result in local, long-term, moderate, beneficial effects on wetlands and the biological ORVs for the Valley segment. Alternative 2 would have an overall local, long-term, minor to moderate, beneficial effect on wetlands and the biological ORVs in the Valley compared to Alternative 1.

Impacts in the Gorge. As described above, user capacity in the Gorge segment would be managed through interim facility limits prior to full implementation of the VERP program. In the Gorge segment, interim limits would consist of maintaining parking at existing levels. This would have no impact on wetland resources compared to Alternative 1 in the short term.

The implementation of VERP monitoring in the Gorge segment would result in data on the condition of resources that would guide future management decisions. Impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken. Low-intensity management responses would likely result in local, long-term, negligible to minor, beneficial effects on wetland resources. Higher intensity management responses are expected to result in local, long-term, minor, beneficial effects on wetlands and the biological

ORVs for the Gorge segment. Alternative 2 would have an overall long-term, minor, beneficial effect on wetlands and the biological ORVs in the Gorge segment compared to Alternative 1

Impacts in El Portal. Under Alternative 2, user capacity for the El Portal segment would initially be managed through interim facility limits. These limits would restrict day parking to existing levels and prohibit new campgrounds or lodging in the El Portal area, thus limiting the potential for increases in use and providing a short-term, minor, beneficial impact on wetland resources. In the long term, a potential increase in visitors in this segment would likely be associated with river activities adjacent to Highway 140 and would result in a negligible impact to wetland resources.

Alternative 2 calls for a revised boundary for the El Portal segment of the river, based on a quarter mile on both sides of the river. A total of 853 acres are included within the zoned areas of the El Portal segment of the river corridor under Alternative 2. Implementation of this river corridor boundary is expected to have a minor, beneficial effect on wetland and the biological ORVs compared to the No Action Alternative, because the Merced River Plan management elements and user capacity program would apply to a greater area than that delineated in Alternative 1.

Under Alternative 2, management zoning for the El Portal segment would consist of Park Operations and Administration (3C) for areas north of the river as well as for existing developed areas south of the river (Murchison structures, Trailer Village/Abbieville), and Day Use (zone 2C) and Open Space (zone 2A) for undeveloped areas south of the river. This alternative provides for park administrative uses on 411 acres (48% of the total 853 acres) within the corridor. Day-use facilities and uses would be allowed on 192 acres and open space would be allowed on 250 acres. Under Alternative 2, Odger's Pond would also be zoned 2C, which would protect this sensitive wetland area. It should be noted that all ORVs must be protected regardless of the zoning designation and whether they are located within or outside of the river corridor boundary. Compared to Alternative 1, the zoning under this alternative is more protective of wetlands and other aspects of the biological ORV.

The implementation of VERP monitoring in the El Portal segment would result in data on the condition of resources that would guide future management decisions. The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken, resulting in local, long-term, minor to moderate, beneficial effects on wetlands and the biological ORVs for the El Portal segment.

Although local, minor, adverse effects on wetlands could occur under this alternative, the wider boundary, restrictive zoning and the VERP program would protect wetland related ORVs on a segment-wide basis.

Impacts in Wawona. Interim facility limits for the Wawona area (as described in Chapter III) would essentially maintain existing user levels and thus have no impact on wetlands relative to Alternative 1. Implementation of VERP monitoring in the Wawona segments would guide future management decisions by providing information regarding the status of wetland resources as related to visitor use in this segment. Impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken. Low-intensity management responses, such as educational signage or brochures, would likely result in local, long-term, minor, beneficial effects on wetland resources. Higher intensity management responses, such as temporarily or permanently closing degraded or sensitive areas, would be expected to result in local, long-term, moderate, beneficial effects on wetlands and the biological ORVs for the

Wawona segments. Overall, Alternative 2 would have a long-term, minor to moderate, beneficial impact on wetlands and the biological ORVs in the Wawona segments.

Summary of Alternative 2 Impacts. In contrast to Alternative 1, the implementation of interim facility limits under Alternative 2 would provide short-term limits on park use until the VERP program could be implemented. Full implementation of VERP monitoring, with a suite of established indicators and standards, would provide important data, informing management planning and driving the implementation of management actions designed to protect wetland resources and the biological ORVs. The revised El Portal river corridor boundary would allow the application of these management elements to a much greater area than that described in Alternative 1 and the more restrictive zoning would limit development potential in certain areas as compared to Alternative 1. Overall, Alternative 2 would have local, short- and long-term, minor to moderate, beneficial effects on wetlands and the biological ORVs. In addition, compliance with existing park policies would help ensure that the biological ORVs related to wetlands are protected and enhanced.

Cumulative Impacts

The effects of past, present, and foreseeable future actions are the same as those described for Alternative 1. Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on wetlands and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 2, could have a net local, long-term, minor, beneficial effect on parkwide wetlands and the biological ORVs of the Merced River corridor.

Impairment

Alternative 2 would have local, short- and long-term, minor to moderate, beneficial effects on parkwide wetlands as well as the biological ORVs of the Merced River corridor and therefore would not impair wetland resources for future generations.

Vegetation

Analysis

The following discussion provides an overview of the types of impacts to vegetation resources that could occur within each segment of the Merced River corridor under Alternative 2. In the short term, park use would generally continue consistent with existing conditions. Interim facilities limits (as described in Chapter III) would serve, for the most part, to manage user capacity at existing levels until the interim limits with VERP program was fully implemented. Implementation of the VERP program would provide data on the condition of park resources to guide future management decisions regarding visitor use. For example, monitoring might show that vegetation at specific locations (i.e., near facilities or other high-use areas such as trails) was being negatively affected by human or stock use, or through habitat fragmentation, local degradation of water quality, or introduction or spread of noxious weeds. Without VERP management actions, impacts on vegetation in the vicinity of facilities and areas of concentrated use could be local, long term, and adverse. On the other hand, VERP monitoring could result in beneficial effects on vegetation resources by, for example, localizing facility- and use-related impacts away from more sensitive areas or reducing user capacity limits.

Current park management tools, including the Merced River Plan management zoning and a variety of policies and guidelines pertaining to sensitive plant communities, provide mechanisms for implementing protective actions. However, implementation of the interim limits with VERP program would provide a powerful tool for systematically monitoring effects of visitor use on sensitive resources, adding a further level of protection that would not be available under Alternative 1.

Management actions associated with the redirection of visitors from areas with sensitive vegetation and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Under Alternative 2, the interim facility limits would include the prohibition of new campgrounds and trails in Wilderness segments VERP program. Compared to Alternative 1, implementation of interim limits and the VERP program in wilderness areas would result in additional resource-specific monitoring, providing additional data on the condition of resources and the visitor experience that would inform future management decisions. VERP indicators have been selected to provide overall information on the health of resources throughout the river corridor. If monitoring data showed that vegetation resources were being negatively affected by visitor use, then a wide range of management actions could be implemented to improve resource conditions to a level that would meet the established standard.

Management actions implemented in response to VERP monitoring for the indicators could range from educating visitors on the effects of riverbank erosion, to closing and restoring vegetation on social trails, to temporarily (or permanently) closing highly degraded or sensitive areas for restoration or conservation. In addition, the number of visitors in a given area could be limited by reducing trailhead quotas or enacting seasonal restrictions on access to portions of the river corridor.

The impacts of management actions implemented as a result of the interim limits with VERP program would vary depending on the type of action taken. Low-intensity management responses, such as educational efforts, would likely result in local, long-term, negligible to minor, beneficial effects on vegetation resources. Higher intensity management responses, such as restoring vegetation to social trails or eroded riverbanks, would likely result in local, long-term, minor, beneficial effects on wilderness vegetation and the biological ORVs in the Wilderness segments of the Merced River corridor.

Under Alternative 2, implementation of interim facility limits and the VERP program, and the continued application of the wilderness quotas, WIMS and the management elements adopted under the Merced River Plan, would have an overall local, long-term, minor, beneficial effect on native vegetation and the biological ORVs in Wilderness segments compared to Alternative 1.

Impacts in Yosemite Valley. Under Alternative 2, user capacity in the Valley would be managed through interim facility limits until full implementation of the VERP program. These limits would generally maintain park visitation at current levels. Exceptions in the Valley include a limit on tour buses that is higher than the current average and a potential increase in campsites, which would still provide fewer campsites than existed prior to the January 1997 flood. VERP program Although a potential increase in tour buses and campground facilities could bring more visitors into the park in the short term, the effects on vegetation would be negligible to minor and adverse. Increased camping facilities could cause minor, long-term adverse impacts to vegetation, though site placement would help to mitigate this impact. Potential tour bus increases would likely have a negligible to minor impact on vegetation, as these visitors typically focus use on site-hardened areas such as Yosemite Lodge and Lower Yosemite Falls; however, minor adverse impacts to meadow vegetation could occur in the El Capitan meadow area, where tour buses stop for views of El Capitan. Compared to Alternative 1, implementation of the VERP program in the Valley would result in additional resource-specific monitoring.

Management actions implemented in response to VERP monitoring are described in detail in Chapter II and could range from educating visitors to temporarily or permanently closing highly degraded or sensitive areas for restoration or conservation. In addition, visitor use could be limited by establishing entrance station limits or enacting seasonal restrictions on access to portions of the river corridor.

The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken. Low-intensity management responses, such as educational efforts, would likely result in local, long-term, minor, beneficial effects on vegetation resources. Higher intensity management responses, such as restoring vegetation to social trails or eroded riverbanks, are expected to result in local, long-term, moderate, beneficial effects on vegetation and the biological ORVs in the Valley. Alternative 2 would have an overall local, long-term, minor to moderate, beneficial effect on native vegetation and the biological ORVs in the Valley segment compared to Alternative 1.

Impacts in the Gorge. As described above, user capacity in the Gorge segment would be managed through interim facility limits prior to implementation of the VERP program. Interim limits would consist of maintaining parking at existing levels. This would have no effect on vegetation resources compared to Alternative 1.

The implementation of VERP monitoring in the Gorge segment would result in data on the condition of resources that would guide future management decisions regarding vegetation and biologic ORVs in this segment. Impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken. Low-intensity management responses, such educational efforts, would likely result in local, long-term, negligible to minor, beneficial effects on vegetation resources. Higher intensity management responses are expected to result in local, long-term, minor, beneficial effects on vegetation and the biological ORVs in the Gorge segment. Alternative 2 would have an overall long-term, minor, beneficial effect on native vegetation and the biological ORVs in the Gorge segment compared to Alternative 1.

Impacts in El Portal. In the short term, user capacity for the El Portal segment would be managed through interim facility limits. These limits would maintain day-visitor parking at existing levels and prohibit new campgrounds or housing in the El Portal area, thus limiting the potential for increases in use and providing a minor, beneficial impact on vegetation resources compared to Alternative 1. In the long-term, a potential increase in visitors in this segment would likely be associated with river activities adjacent to Highway 140 and result in a negligible impact to vegetation.

Alternative 2 calls for a quarter-mile boundary on both sides of the river for the El Portal segment. A total of 853 acres are included within the El Portal segment of the river corridor under

Alternative 2. Compared to the No Action Alternative, implementation of this river corridor boundary is expected to have a minor, beneficial effect on vegetation and the biological ORVs because the management elements and VERP program would apply to a greater area under Alternative 2 than under Alternative 1.

Under Alternative 2, management zoning for the El Portal segment would consist primarily of Park Operations and Administration (3C) for areas north of the river and for existing developed areas south of the river (Murchison structures, Trailer Village/Abbieville), and Day Use (2C) for undeveloped areas south of the river. On the north side of the river, specific known ORVs would be protected through 2C zoning. This alternative provides for park administrative uses on 411 acres (48% of the total 853 acres) within the corridor. Day-use facilities and uses would be allowed on 192 acres, and 250 acres would be designated as open space. Compared to Alternative 1, the zoning under this alternative is more protective of vegetation and biologic ORVs.

The implementation of VERP monitoring in El Portal would result in data on the condition of vegetation resources that would guide future management decisions in this segment. The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken, resulting in local, long-term, minor to moderate, beneficial effects on vegetation and the biological ORVs for the El Portal segment.

Although local, moderate, adverse effects on native vegetation could occur as the result of future development (e.g., new employee housing, road repair) vegetation and biologic ORVs would be protected on a segment-wide basis. The more restrictive zoning under this alternative (as compared to Alternative 1), the wider river corridor, and the VERP program would all serve to protect vegetative resources in parts of the El Portal area.

The revised El Portal river corridor boundary under Alternative 2 is expected to have a local, long-term, minor, beneficial effect on vegetation resources in the El Portal segment compared to Alternative 1. Alternative 2 would have an overall local, long-term, minor, beneficial effect on native vegetation and the biological ORVs in the El Portal segment compared to Alternative 1.

Impacts in Wawona. Interim facility limits for the Wawona area (described in Chapter III) would essentially maintain existing use levels and thus have no impact on vegetation resources relative to Alternative 1. Implementation of VERP monitoring in the Wawona segments would guide future management decisions. Impacts of management actions as a result of VERP monitoring would vary depending on the type of action taken. Low-intensity management responses, such as educational signage or brochures, would likely result in local, long-term, minor, beneficial effects on vegetation. Higher intensity management responses, such as temporarily or permanently closing highly degraded or sensitive areas, would be expected to result in local, long-term, moderate, beneficial effects on vegetation and the biological ORVs in the Wawona segments. Overall, Alternative 2 would have a long-term, minor to moderate, beneficial impact on vegetation and the biological ORVs in the Wawona segments.

Summary of Alternative 2 Impacts. In contrast to Alternative 1, implementation of interim facility limits under Alternative 2 would provide short-term limits on park use until the VERP program could be implemented. Full implementation of VERP monitoring, with a suite of established indicators and standards, would provide important data to inform management planning and drive management actions designed to protect vegetation resources and the biological ORVs. The revised El Portal river corridor boundary would allow management elements to be applied to a much greater area than that described for Alternative 1 and more restrictive zoning would limit locations for development as compared to Alternative 1. Overall, Alternative 2 would have local, short- and long-term, minor to moderate, beneficial effects on vegetation and the biological ORVs. Compliance with existing park policies would help ensure that the biological ORVs related to vegetation are protected and enhanced.

Cumulative Impacts

Cumulative effects to vegetation would be the same as described under Alternative 1. Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on vegetation and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 2, could have a net local, long-term, minor, beneficial effect on parkwide vegetation and the biological ORVs of the Merced River corridor.

Impairment

Alternative 2 would have local, short- and long-term, minor to moderate, beneficial effects on parkwide vegetation and the biological ORVs of the Merced River corridor and therefore would not impair vegetation resources for future generations.

Wildlife

Analysis

The following discussion provides an overview of the types of impacts to wildlife resources that could occur within each segment of the Merced River corridor under Alternative 2. In the short term under Alternative 2, visitor numbers are expected to be similar to those under Alternative 1. Short-term, minor, adverse effects to wildlife could occur in localized areas through implementation of interim visitor and employee use limits that would allow some growth in bus traffic, campsites, and employee housing. However, long-term, beneficial impacts to wildlife would occur through implementation of VERP monitoring and subsequent management actions that would maintain use of the park at a level that would protect wildlife resources and the biological ORVs.

Management actions associated with the redirection of visitors from areas with sensitive wildlife habitat and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection are expected to be negligible to minor, and adverse.

Impacts in Wilderness. Under Alternative 2, interim limits would not allow for any increase in back-country facilities in Little Yosemite Valley on the Merced Lake High Sierra Camp, or in more remote wilderness portions of the river corridor. Under Alternative 2, user capacity within Wilderness segments of the Merced River would continue to be addressed through trailhead quotas and the monitoring of resources conditions, as under Alternative 1. Alternative 2 would include implementation of the interim limits and the VERP program, resulting in additional resource-specific monitoring of indicators within wilderness areas over the long term. VERP indicators relevant to wildlife that will be monitored in wilderness zones are discussed in Chapter II.

Existing wilderness quotas based on resource protection goals currently restrict the number of overnight users on both established trails and cross-country routes in wilderness areas. These quotas would remain in place and, together with WIMS monitoring, would allow the park to prevent degradation of wildlife values in wilderness segments of the river. Implementation of VERP monitoring would provide additional data on wildlife resources. Management actions taken in response to VERP monitoring of wildlife indicators could range from less restrictive measures (e.g., visitor education efforts) to more restrictive measures (e.g., increased enforcement of existing regulations, restrictions on certain activities such as stock use, and restrictions on the level of use or closure of certain areas). Educational efforts could include requiring visitors to view printed or video information prior to receiving a wilderness permit. More intensive measures could include increased law enforcement in wilderness areas to ensure that visitors comply with setbacks on campsites and other restrictions. Finally, the most restrictive measures could include reducing wilderness use by reducing trailhead quotas in some areas. Park management could also implement restoration of riparian vegetation if areas needed to be closed due to visitor-related impacts.

The impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions such as visitor education are expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, negligible, beneficial impact. Increased law enforcement, reduced trailhead quotas, and closure of areas would likely result in local, short- and long-term, minor, beneficial impacts to wildlife resources by reducing trampling, erosion, social trails, human disturbance to wildlife, and human/wildlife conflicts.

Due to the seasonal nature of visitation to Wilderness segments of the river corridor coupled with the limited number of visitors allowed into the river corridor in these areas as a result of the park's existing trailhead quota system, implementation of interim limits and the VERP program is expected to have local, short- and long-term, negligible to minor, beneficial impacts to wildlife resources and the biological ORVs in Wilderness segments.

Impacts in Yosemite Valley. Alternative 2 would include implementation of interim limits and the VERP program, resulting in additional resource-specific monitoring of indicators within Yosemite Valley. Wildlife-related VERP indicators to be monitored in Yosemite Valley are discussed in Chapter II.

Under Alternative 2, local, short-term, minor, adverse effects to wildlife resources and the biological ORVs could occur through implementation of interim visitor and employee use limits that would allow some growth in bus traffic, campsites, and employee housing. These effects could include increased opportunities for wildlife exposure to food; a potential for an increase in erosion; trampling; and other disturbances to wildlife habitat and wildlife within the Merced River corridor. However, any additional campsites would be located in areas within the Valley where existing habitat values are low. Potential tour bus increases would likely have a negligible to minor impact on wildlife, as these visitors typically use site-hardened areas such as Yosemite Lodge and Lower Yosemite Falls. Because wildlife values will remain unchanged in most of the Valley segment in the short-term, wildlife-related ORVs will be protected and enhanced on a segment-wide basis.

In the long-term, moderate, beneficial impacts to wildlife would occur through implementation of VERP monitoring and subsequent management actions that would maintain use in the park at a level that would protect wildlife resources and the biological ORVs.

Management actions taken in response to VERP monitoring on biological indicators could range from less restrictive measures (e.g., visitor education efforts) to more restrictive measures (e.g., increased ranger patrols, and restrictions on the level of use or closure of certain areas). Education efforts could include printed or video information and interpretive signs. More intensive measures could include increasing enforcement to ensure that visitors comply with trail restrictions or reducing use by closing some areas. Park management could also restore riparian vegetation in any areas that needed to be closed due to future visitor-related impacts.

The impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions such as visitor education would likely reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, minor, beneficial impact. Increased enforcement of food storage restrictions and closure of areas is expected to result in local, short- and long-term, minor to moderate, beneficial impacts to wildlife resources by reducing trampling, erosion, social trails, human disturbance to wildlife, and human/wildlife conflicts.

Alternative 2 would implement a series of interim limits, a comprehensive VERP program, and all of the existing user capacity program measures. Alternative 2 would prevent visitor impacts from degrading ORVs. Overall, Alternative 2 would result in a net local, short- and long-term, minor, beneficial effects on wildlife.

Impacts in the Gorge. Under Alternative 2, interim limits would not allow for any increase in parking, visitor services or park facilities above current levels. In the long-term, the implementation of VERP monitoring in the Gorge segment would result in data on the condition of wildlife resources that would guide future decisions regarding wildlife resources. The impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions such as visitor education are expected to reduce impacts to wildlife by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, minor, beneficial impact. Increased ranger patrols and closures of areas would be expected to result in local, short- and long-term, minor to moderate, beneficial impacts to wildlife resources by reducing trampling, erosion, social trails, human disturbance to wildlife, and human/wildlife conflicts.

Overall, the existing Merced River Plan elements and the VERP monitoring and management program would prevent visitor impacts from adversely affecting ORVs and result in a local, short- and long-term, minor to moderate, beneficial effect on native wildlife and the biological ORVs within the Gorge.

Impacts in El Portal. Under Alternative 2, the Wild and Scenic River boundary includes the ORVs within one quarter-mile of the river within the El Portal Administrative Site. Alternative 2 designates lower intensity Day Use (2C) and Open Space (2A) zoning for the majority of the area south of the river and higher intensity Park Operations and Administration (3C) zoning in the vicinity of existing development areas and on other potentially developable sites. This zoning is more restrictive of development than the zoning in Alternative 1.

Examples of how management zoning would affect native wildlife and the biological ORVs of El Portal are described below.

- The Sand Pit in El Portal was once used to mine sand from the Merced River. vegetation such as the host plant for the Valley elderberry longhorn beetle, as well as a recently identified population of Congdon's wooly sunflower exist at this site. Under its 2C zoning, the Sand Pit could be restored, which would allow natural processes to prevail at this location, enhance the aquatic habitat, and allow natural revegetation with riparian species. This could result in a local, minor to moderate, beneficial effect on this ORV.
- Portions of El Portal are zoned 3C (e.g., the Trailer Village, Old El Portal), which could allow additional development or redevelopment (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Most areas zoned 3C are already developed to support park operations and wildlife habitat in these areas has already been impacted. Potential development could have both short-term (e.g., construction-related) and long-term (e.g., night lighting, human presence, fire suppression in the vicinity of structures), adverse effects on native wildlife. Although application of mitigation measures would reduce impacts, long-term, minor to moderate, adverse effects to native wildlife (e.g., conversion of upland woodland or scrub vegetation to developed facilities) would remain in these portions of the El Portal segment.
- The revised river corridor boundary would increase the area included in the corridor from 193 acres to 853 acres. Though 411 acres would be zoned 3C, allowing development or redevelopment of park operations and administration facilities, this development would be primarily concentrated in the vicinity of existing development. Designation of 192 acres of habitat zoned 2C and 250 acres zoned 2A would limit the development intensity in these regions, resulting in a local, long-term, minor, beneficial effect on wildlife resources and the biological ORVs.

Under Alternative 2, interim limits would not allow for any increase in parking or visitor services above current levels. In the long-term, the addition of the VERP program would result in monitoring of relevant wildlife indicators in El Portal and data on the conditions of wildlife resources that would guide future management decisions. The impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address user-related impacts on wildlife resources. Management actions such as education would be expected to reduce impacts by changing human behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, minor, beneficial impact. Increased ranger patrols, increased enforcement of food storage restrictions, and closure of areas would likely result in local, short- and long-term, moderate, beneficial impacts to wildlife resources by reducing trampling, erosion, social trails, human disturbance to wildlife, and human/wildlife conflicts.

The application of management zoning and other Merced River Plan elements, together with VERP monitoring and management actions would protect and enhance wildlife and the biological ORVs in El Portal. Although the zoning in El Portal allows for road repair as well as additional development of employee housing and park administration facilities, which could have short- and long-term, adverse effects on native wildlife, areas zoned 3C are mostly developed and are of marginal benefit to wildlife. Overall, the application of a wider river boundary, more restrictive management zoning, and the VERP program within El Portal would have a local, short- and long-term, minor, beneficial effect on native wildlife and the biological ORVs.

Impacts in Wawona. Under Alternative 2, interim limits would not allow for any increase in parking, visitor services, or any additional park facilities above current levels. Alternative 2 would include implementation of interim limits and the VERP program. Full implementation of the VERP program would result in resource specific monitoring of wildlife indicators. The impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions such as visitor education are expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, negligible to minor, beneficial impact. Increased ranger patrols, increased enforcement of food storage restrictions, and closure of areas are expected to result in local, short- and long-term, minor, beneficial impacts to wildlife resources by reducing trampling, erosion, social trails, human disturbance to wildlife, and human/wildlife conflicts.

If the park implemented management actions associated with the redirection of visitors from areas with sensitive wildlife habitat to other areas outside of the Merced River corridor, there could be an adverse effect on resources outside the corridor. However, visitors would be directed to areas better able to withstand use and the redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term and variable in location. Therefore, potential impacts to resources in other areas of the park as a result of redirection are expected to be negligible to minor, and adverse. If the park instead took management action in response to VERP monitoring that decreased overall visitor numbers, there would be no new impacts from visitor use.

Overall, Alternative 2 would have a local, short- and long-term, minor, beneficial impact on native wildlife and the biological ORVs of Wawona.

Summary of Alternative 2 Impacts. Overall, the user capacity limits and the VERP monitoring and management program would allow existing natural areas to remain relatively intact and would direct restoration and enhancement of degraded native habitats. The continued use of the Wilderness Quota system and WIMS would further protect wildlife and biologic ORVs in the Wild river segments. The revised river corridor boundary at El Portal includes the biological ORVs within a quarter-mile of the river and includes restrictive zoning, resulting in beneficial effects on wildlife resources. Alternative 2 would result in a local, short- and long-term, minor to moderate, beneficial impact on native wildlife and the biological ORVs within the river corridor. Compliance with existing park policies would help ensure that the biological ORVs related to wildlife are protected and enhanced.

Cumulative Impacts

Cumulative effects to wildlife from past, present, and foreseeable future actions are the same as described for Alternative 1. Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on wildlife and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 2, could have a net local, short- and long-term, minor to moderate, beneficial effect on parkwide native wildlife and the biological ORVs of the Merced River corridor.

Impairment

Alternative 2 would have a local, short- and long-term, minor to moderate, beneficial effect on parkwide native wildlife as well as the biological ORVs of the Merced River corridor and therefore would not impair wildlife resources for future generations.

Rare, Threatened, and Endangered Species

Analysis

The following discussion provides an overview of the types of impacts to rare, threatened, and endangered species that could occur within each segment of the Merced River corridor under Alternative 2. In the short term under Alternative 2, visitor numbers are expected to be similar to those under Alternative 1. In the long term, however, visitor numbers would likely be lower than under Alternative 1 due to VERP monitoring and potential management actions that could limit the number of park visitors within the planning corridor. Short-term, adverse effects to special-status species could occur through implementation of interim visitor and employee use limits that would allow some growth in bus traffic, campsites, and employee housing. However, long-term, beneficial impacts to special-status species would occur through implementation of VERP monitoring and subsequent management actions that would maintain use of the park at a level that would protect rare, threatened, and endangered species and the biological ORVs. If the park implemented management actions associated with the redirection of visitors from areas with known rare, threatened and endangered species to other areas outside of the Merced River corridor, there could be an adverse effect on resources outside the corridor. However, visitors would be redirected to areas better able to withstand use and the redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term and variable in location. Therefore, potential impacts to resources in other areas of the park as a result of redirection are expected to be negligible to minor, and adverse. If the park instead took management action in response to VERP monitoring that decreased overall visitor numbers, there would be no new impacts from visitor use.

A Biological Assessment was presented to the U.S. Fish and Wildlife Service in compliance with Section 7 of the Federal Endangered Species Act in January 2000. A revised Biological Assessment, based on the *Merced River Plan/FEIS,* was submitted to the U.S. Fish and Wildlife Service in June 2000. In July 2000, the National Park Service received a letter from the U.S. Fish and Wildlife Service concurring with the determination that the Merced River Plan would not adversely affect special-status species. Furthermore, revisions to the Merced River Plan to address user capacity and correct the river boundary in El Portal would not result in adverse effects on rare, threatened, and endangered species. The National Park Service will restate its assessment of special -status species issues and submit a letter to the U.S. Fish and Wildlife Service for review. The letter will request U.S. Fish and Wildlife Service concurrence with the determination that the Revised Merced River Plan would not adversely affect rare, threatened, and endangered species.

An overriding assumption of the Biological Assessment and U.S. Fish and Wildlife Service letter of concurrence was that each site-specific action that could occur under the Merced River Plan would be analyzed as required by NEPA and the Endangered Species Act, and that all federal laws would be complied with during implementation. Since the alternatives analyzed in this document are programmatic, specific commitments of resources are not discussed. Therefore, a Biological Evaluation and/or Biological Assessment would be prepared for all site-specific projects, as warranted. Some site-specific projects would have the potential to adversely affect rare, threatened, or endangered species. Therefore, site- and project-specific assessments and determinations, in accordance with the provisions of the Endangered Species Act and in cooperation with the U.S. Fish and Wildlife Service, would be required for future actions.

Impacts in Wilderness. Under Alternative 2, interim limits would not allow for any increase in back-country facilities in Little Yosemite Valley on the Merced Lake High Sierra Camp, or in more remote wilderness portions of the river corridor. User capacity within Wilderness segments of the Merced River would continue to be addressed through trailhead quotas and monitoring of wilderness resources conditions. Alternative 2 would also include the implementation of interim limits and the VERP program, resulting in additional resource-specific monitoring of indicators within wilderness areas. VERP indicators to be monitored in wilderness zones are discussed in Chapter II.

Existing user quotas based on resource protection goals currently restrict the number of overnight users on both established trails and cross-country routes in wilderness areas. These quotas would remain in place and, together with WIMS monitoring, would allow the park to prevent degradation to high-elevation meadows (a habitat for rare, threatened and endangered species) and biological ORVS is Wilderness sections of the river. Management actions taken in response to VERP monitoring of rare, threatened, and endangered species indicators could range from softer measures (e.g., visitor education efforts) to more restrictive measures (e.g., increased enforcement of existing regulations, restrictions on certain activities such as stock use, and restrictions on the level of use or closure of certain areas). Enforcement of trailhead quotas could also be increased. More intensive measures could include increased law enforcement in wilderness areas to ensure that visitors comply with setbacks on campsites and other restrictions. Finally, the most restrictive measures could include reducing visitor use in wilderness areas by reducing trailhead quotas or closing some areas. Park management could also restore riparian vegetation if areas were closed due to visitor-related impacts.

The impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on rare, threatened, and endangered species. Management actions such as visitor education are expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local, short- and long-term, negligible, beneficial impact. Increased law enforcement, reduced trailhead quotas, and closure of areas would likely result in local, short- and long-term, minor, beneficial impacts to rare, threatened, and endangered species by reducing trampling, erosion, social trails, and human disturbance.

Due to the seasonal nature of visitation to Wilderness segments of the river corridor coupled with the limited number of visitors allowed into the river corridor in these areas as a result of the park's trailhead quota system, implementation of interim limits and the VERP program is expected to have local, short- and long-term, negligible to minor, beneficial impacts to rare, threatened, and endangered species and the biological ORVs in wilderness areas.

Impacts in Yosemite Valley. Alternative 2 would include implementation of interim limits and the VERP program, resulting in additional resource-specific monitoring of indicators within Yosemite Valley. VERP indicators for rare, threatened, and endangered species that would be monitored in Yosemite Valley are discussed in Chapter II.

Management actions taken in response to VERP monitoring of biological indicators could range from softer measures (e.g., visitor education efforts) to more restrictive measures (e.g., increased ranger patrols and restrictions on the level of use or closure of certain areas). Educational efforts could include printed or video information and interpretive signs. More intensive measures could include increasing enforcement to ensure that visitors comply with trail restrictions and reducing use by closing some areas. Park management could also restore riparian vegetation in areas due to visitor-related impacts.

The impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on rare, threatened, and endangered species. Management actions such as visitor education would likely reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local short- and long-term, minor, beneficial impact. Increased enforcement of food storage restrictions and closure of areas is expected to result in local, short- and long-term, minor to moderate, beneficial impacts to rare, threatened, and endangered species by reducing trampling, erosion, social trails, and human disturbance to wildlife.

Under Alternative 2, short-term, minor to moderate, adverse effects to special-status species and the biological ORVs could occur through implementation of interim visitor and employee use limits that would allow some growth in bus traffic, campsites, and employee housing. These effects could include increased opportunities for trampling, erosion, noise, and other disturbances to special-status species and their habitats within the Merced River corridor, potentially resulting in minor adverse impacts to rare, threatened and endangered species. Potential tour bus increases would have a negligible to minor impact on rare, threatened and endangered species, as these visitors typically use site-hardened areas such as parking and adjacent roadside areas; an increase in these types of visitors could result in minor impacts on rare, threatened and endangered species. However, long-term, moderate, beneficial impacts to rare, threatened, and endangered species would occur through implementation of VERP monitoring and subsequent management actions that would maintain use in the park at a level that would protect rare, threatened, and endangered species and the biological ORVs.

Alternative 2 would include implementation of the existing Merced River Plan elements, existing user capacity measures and VERP monitoring and management actions. These would prevent visitor impacts from adversely affecting the biological ORVs. Alternative 2 would provide protection for rare, threatened, and endangered species and related biological ORVs in Yosemite Valley and would result in a net local, short-and long-term, moderate, beneficial effect.

Impacts in the Gorge. Under Alternative 2, interim limits would not allow for any increase in parking or other visitor services above current levels. Over the long-term, the implementation of VERP monitoring in the Gorge segment would result in data on the condition of special-status species that would guide future resource management and visitor experience decisions. The impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on rare, threatened, and endangered species. Management actions such as visitor education are expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local, short- and long-term, minor, beneficial impact. Increased ranger patrols, increased enforcement of trail restrictions, and closure of areas also is expected to result in local, short- and long-term, minor to moderate, beneficial impacts to rare, threatened, and endangered species by reducing trampling, erosion, social trails, and human disturbance to wildlife.

Overall, implementation of the VERP program and resulting management actions would prevent visitor impacts from adversely affecting the biological ORVs and result in a local, short- and long-term, minor to moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs within the Gorge segment.

Impacts in El Portal. Under Alternative 2, the river corridor boundary within El Portal includes the biological ORVs within a quarter-mile on either side of the Merced River within the El Portal Administrative Site. Alternative 2 designates lower intensity Day Use (2C) and Open Space (2A) zoning for the majority of the area south of the river and higher intensity Park Operations and Administration (3C) zoning in the vicinity of existing development areas and on other potentially developable sites. This zoning is more restrictive of development than Alternative 1.

Examples of how management zoning would affect rare, threatened, and endangered species and the biological ORVs of El Portal are described below.

- The Sand Pit in El Portal was once used to mine sand from the Merced River. Riparian vegetation, such as the host plant for the Valley elderberry longhorn beetle (blue elderberry), as well as the recently identified population of Congdon's wooly sunflower exist at the site. Under Day Use (2C) zoning, the Sand Pit could be restored, which would allow natural processes to prevail at this location, enhance the aquatic habitat, and allow natural revegetation with riparian species, thus resulting in a local, minor to moderate, beneficial effect on this ORV.
- Portions of El Portal are zoned 3C (e.g., the Trailer Village, Old El Portal), which could allow additional development or redevelopment (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Most areas zoned 3C are already developed and habitat values in these areas have already been impacted. Potential development could have both short-term (e.g., construction-related) and long-term (e.g., night lighting, human presence, fire suppression in the vicinity of structures), minor to major, adverse effects on rare, threatened, and endangered species. Although application of mitigation measures would reduce impacts, long-term, minor to moderate, adverse effects to rare, threatened, and endangered species (e.g., conversion of upland woodland or scrub vegetation to developed facilities) would remain.
- The revised river corridor boundary would increase the area included in the river corridor from 193 acres to 853 acres. Though 411 acres of habitat would be zoned 3C, allowing development or redevelopment of park operations and administration facilities, this development would be primarily concentrated in the vicinity of existing development. Designation of 192 acres of habitat zoned 2C and 250 acres zoned 2A (encompassing the majority of biological ORVs south of the river and in some areas north of the river that potentially support rare, threatened, and endangered species, such as Valley elderberry longhorn beetle, Tompkin's sedge, and Congdon's wooly sunflower) would limit the development intensity in these regions, resulting in a local, long-term, minor, beneficial effect on rare, threatened, and endangered species and the biological ORVs.

The addition of the VERP program would result in the monitoring of biological indicators in El Portal and data on the conditions of special-status species that would guide future resource management and visitor-use management decisions. The impacts of management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address user-related impacts on rare, threatened, and endangered species. Management actions such as education are expected to reduce impacts by changing human behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local, short- and long-term, minor, beneficial impact. Restricted access to recreation areas and area closure would likely result in local, short- and long-term, moderate, beneficial impacts to rare, threatened, and endangered species by reducing trampling, erosion, social trails, human disturbance to wildlife, and human/wildlife conflicts.

Although the zoning in El Portal allows for road repair as well as additional development of park administration facilities and employee housing, which could have short- and long-term, adverse effects to rare, threatened, and endangered species, areas zoned 3C are mostly developed and of marginal benefit to sensitive species. Overall, the application of an increased river boundary, more restrictive management zoning, and VERP monitoring and management actions within El Portal would have a local, short- and long-term, minor, beneficial effect on rare, threatened, and endangered species and the biological ORVs.

Impacts in Wawona. Under Alternative 2, interim limits would not allow for any increase in parking, visitor services, or any additional park facilities above current levels. In the long term, Alternative 2 would include implementation of interim limits and the VERP program, resulting in the monitoring of special-status species indicators within the Wawona segments. The impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on rare, threatened, and endangered species. Management actions such as visitor education are expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local, short- and long-term, negligible to minor, beneficial impact. Increased ranger patrols, increased enforcement of food storage restrictions, and closure of areas is expected to result in local, short- and long-term, minor, beneficial impacts to rare, threatened, and endangered species by reducing trampling, erosion, social trails, and human disturbance to wildlife.

Overall, Alternative 2 would have a local, short- and long-term, minor, beneficial impact on rare, threatened, and endangered species and the biological ORVs of Wawona.

Summary of Alternative 2 Impacts. Overall, implementation of interim facility limits, VERP monitoring and management actions, and the revised river corridor boundary and management zoning in El Portal would allow natural areas to remain relatively intact and would direct restoration and enhancement of degraded native habitats. These measures would be in addition to the user capacity measures from Alternative 1, including Wilderness trailhead quotas. The revised river corridor boundary at El Portal includes biological and river-related ORVs within a quarter-mile of the river, resulting in a beneficial effect on rare, threatened, and endangered species. Alternative 2 would result in a local, short- and long-term, minor to moderate, beneficial impact on rare, threatened, and endangered species and the biological ORVs within the river corridor. Additionally, compliance with existing park policies and federal regulations such as the

Endangered Species Act would help ensure that the biological ORVs in each river segment are protected and enhanced.

Cumulative Impacts

Cumulative effects to rare, threatened, and endangered species from past, present, and future foreseeable actions are the same as those described for Alternative 1. Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on rare, threatened, and endangered species and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 2, could have a net local, short- and long-term, minor to moderate, beneficial effect on parkwide rare, threatened, and endangered species and the biological ORVs of the Merced River corridor.

Impairment

Alternative 2 would have a local, short- and long-term, minor to moderate, beneficial effect on parkwide rare, threatened, and endangered species and the biological ORVs of the Merced River corridor and therefore would not impair these resources for future generations.

Air Quality

Analysis

The following discussion provides an overview of the types of impacts to air quality that could occur within each segment of the Merced River corridor associated with Alternative 2.

In general, under Alternative 2 air quality in the river corridor would continue to be influenced by local sources within the park and by regional sources upwind of the park, and would continue to be subject to emissions trends similar to those described under Alternative 1.

The main differences between air quality conditions under Alternative 2 and those under Alternative 1 would relate to the following issues: implementation of a VERP program; interim limits on the number of commercial tour buses allowed into Yosemite Valley; and the construction or demolition activities and long-term impacts on air quality that could occur as a result of the change in management zoning resulting from adoption of a revised river corridor boundary in the El Portal segment of the river corridor.

Impacts in Wilderness. User capacity within wilderness areas of Yosemite National Park is currently addressed through a trailhead quota system and monitoring of wilderness resource conditions. Under Alternative 2, use of trails in wilderness areas would continue consistent with Alternative 1.

Implementation of the VERP program for Wilderness segments would result in additional monitoring of indicators within wilderness areas. The indicators do not address conditions specific to air quality. If the standards for these indicators were not met, then management actions would be required.

Management actions in response to VERP monitoring could range from softer measures (visitor education efforts) to more restrictive measures (increased enforcement of existing regulations, restrictions on certain activities [such as stock use], and restrictions on level of use [closure of certain areas]). Educational efforts could include printed or video information required to be viewed and acknowledged prior to visitors receiving a wilderness permit. The most restrictive measures could include reducing visitor use through reduced wilderness trailhead quotas and closure of some areas.

The impacts of the management actions as a result of VERP monitoring would vary depending on the action. Management actions such as visitor education would be expected to have little or no effect on air quality in wilderness areas. More restrictive measures, such as the reduction of trailhead quotas or restrictions on stock use, could have beneficial effects by reducing the number of people recreating within the river corridor. These more restrictive measures could result in fewer people using wilderness areas and could indirectly result in fewer vehicle trips (and vehicle-miles traveled) and a corresponding reduction in ozone precursor and particulate matter emissions in other areas of the park. On this basis, management actions could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Overall, Wilderness segments of the river corridor would continue to be largely free of effects from local emissions sources (with the exception of prescribed fires), but would be subject to regionwide emissions trends. Overall, Alternative 2 is expected to prevent visitor use from adversely affecting ORVs. With respect to ozone and particulate matter, implementation of the VERP program would be expected to have a local, long-term, negligible, beneficial impact on air quality in Wilderness segments relative to Alternative 1.

Impacts in Yosemite Valley. Like Alternative 1, under Alternative 2 air quality in the Valley segment of the river corridor would continue to be influenced by local sources within the park and by regional sources upwind of the park. The effects of local emissions sources would continue to be concentrated in Valley areas. Emissions from local stationary, area, and mobile sources would follow emissions trends and continue to be regulated in a manner consistent with Alternative 1.

In the short term, visitor levels and associated traffic in the Valley would remain approximately the same as existing levels, similar to Alternative 1. With the exception of housing, buses, and campground sites, interim facility limits would be capped at existing levels. An increase in tour buses over current levels would incrementally contribute to air emissions in those areas of Yosemite Valley frequented by buses. This increase would result in a local, short-term, minor adverse effect on air quality. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than Alternative 1 as a result of VERP monitoring and management.

Implementation of the VERP program and other features of Alternative 2 could have an indirect beneficial impact on air quality in Yosemite Valley. For example, the interim limits on the number of commercial tour buses allowed into the Valley that would be implemented to address traffic congestion could also reduce criteria air pollutant emission levels in the Valley relative to Alternative 1 in the short term.

VERP indicators do not directly address conditions specific to air quality; however, monitoring of congestion on major park roads indirectly addresses localized air quality in congested areas. The standard for level of congestion on major park roads would be that the number of vehicles in any activity area be no greater than the number of endorsed parking spaces. If the standards set for level of congestion on major park roads or other standards and indicators were not met, management actions would be required to remedy the situation.

Management actions could range from increased visitor education, to reducing infrastructure (parking, picnic areas, etc.), to further limiting the number of day-use commercial bus permits (including YARTS) or number of cars allowed in the Valley, to construction of facilities (boardwalks, platforms, trails) to allow access to sensitive areas while protecting the natural resources, to restrictions on level of use (closure of certain areas). Management actions would likely differ depending on which zone(s) would be affected. Management actions would more likely be restrictive of levels and types of visitor use in wilderness areas and zones 2A and 2B, as these areas are typically more sensitive to visitor impacts and are managed for lower visitor concentrations. Management actions taken to address standards in areas zoned 2C, 2D, and Developed would likely focus more on education, site hardening, and other management actions that continue to allow for visitor use, because these areas have been identified as being appropriate for higher levels of visitor use.

The effects of management actions would vary by the action. Management actions such as visitor education would be expected to have little or no effect on air quality. More restrictive measures could have beneficial effects by reducing the number of vehicles and buses or the number of people recreating within the river corridor. These more restrictive measures could result in fewer people in the Valley and could indirectly result in fewer vehicle trips (and vehicle-miles traveled) and a corresponding reduction in ozone precursor and particulate matter emissions. Management actions could result in local, long-term, negligible, beneficial impacts on air quality in the park and region relative to Alternative 1.

Conversely, implementation of management actions that result in site hardening, construction of new facilities (e.g., observation platforms, boardwalks, or new trails), or removal of existing facilities (e.g., parking spaces, picnic tables) could result in the generation of substantial amounts of dust (including PM-10 and PM-2.5) primarily from “fugitive” sources (i.e., emissions released through means other than a stack or tailpipe) and lesser amounts of other criteria air pollutants, primarily from operation of heavy equipment. Dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, these construction activities could result in significant quantities of dust, and, as a result, local visibility and PM-10 and PM-2.5 concentrations could be adversely affected. Without mitigation, dust raised by construction from certain management actions could have a moderate but temporary effect in the immediate vicinity of individual sites. Implementation of Best Management Practices listed in Appendix B would reduce these temporary and localized air quality impacts to a minor level. On this basis, these types of management actions could result in localized, short-term, minor, adverse impacts on air quality. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas.

Overall, Alternative 2 is expected to prevent visitor use from adversely affecting ORVs in the Valley segments. Certain VERP management actions could result in localized short-term, minor, adverse impacts on air quality during construction activities. However, with respect to ozone and particulate matter, implementation of the VERP program under Alternative 2 would likely have a local, long-term, negligible, beneficial impact on air quality in the Valley compared to Alternative 1 because any increases in user numbers and associated vehicle use would likely be lower.

Impacts in the Gorge. Like Alternative 1, under Alternative 2, areas zoned Untrailed (1A), Open Space and Undeveloped Open Space (2A, 2A+), and Discovery (2B) in the Gorge segment would continue to not be affected by local emissions sources (with the exception of prescribed fires) but would be subject to regionwide emissions trends. Areas zoned Day Use (2C), Attraction (2D), and Park Operations and Administration (3C) would continue to experience a local, long-term, minor, adverse effect due to the concentration of vehicular emissions in those areas.

In the short term, visitor levels and associated vehicle use in the Gorge segment would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, user numbers and associated vehicle use could increase, but such increases would likely be lower than Alternative 1 due to VERP monitoring.

Implementation of the VERP program could have an indirect, beneficial impact on air quality in the Gorge. VERP indicators do not directly address conditions specific to air quality; however, monitoring of congestion on major park roads indirectly addresses localized air quality in congested areas. If the standards set for congestion levels on major park roads or other standards and indicators were not met, management actions would be required to remedy the situation.

Management actions could range from less restrictive measures such as education and site hardening, to more restrictive actions to reduce visitor activities or access in certain areas, as discussed in previous sections. Management actions would likely differ depending on which zone(s) were affected. Since most of the Gorge segment is zoned for less intensive uses, management actions in these areas would more likely be restrictive regarding levels of use and activities

The effects of management actions would vary by the action. Management actions such as visitor education would likely have little or no effect on air quality. More restrictive measures could have beneficial effects by reducing the number of vehicles or buses or the number of people recreating within the river corridor. These more restrictive measures could result in fewer people in the Gorge segment and could indirectly result in fewer vehicle trips and associated vehicle-miles traveled and a corresponding reduction in ozone precursor and particulate matter emissions. On this basis, management actions could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Conversely, management actions that result in site hardening, construction of new facilities, or removal of existing facilities could have local, short-term, minor (with implementation of Best Management Practices), adverse impacts on air quality during construction as discussed under the Yosemite Valley segment above. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas.

Overall, Alternative 2 is expected to prevent visitor use from adversely affecting ORVs in the Gorge segment. Certain management actions in response to monitoring could result in localized short-term, minor (with implementation of Best Management Practices), adverse impacts on air quality during construction activities. However, with respect to ozone and particulate matter, the Alternative 2 VERP program would likely have a local, long-term, negligible, beneficial impact on air quality in the Gorge segment compared to Alternative 1 because any increases in user numbers and associated vehicle use would likely be lower.

Impacts in El Portal. Under Alternative 2, the boundary for the El Portal segment of the river would be based on a quarter-mile boundary on either side of the river. The management zoning in El

Portal under Alternative 2 would primarily be zoned Park Operations and Administration (3C) north of the river and in existing developed areas south of the river, and be zoned Day Use (2C) and Open Space (2A) in undeveloped areas south of the river. On the north side of the river, some known ORVs would also be protected through Day Use (2C) zoning. Development in the El Portal area would be more restrictive under Alternative 2 than under Alternative 1, where the boundary would be limited to the 100-year floodplain or River Protection Overlay, whichever is greater. The total acreage within the El Portal segment of the river corridor under Alternative 2 would be 853 acres, which is substantially greater than the boundary presented under Alternative 1.

The proposed boundary and zoning designations for the El Portal segment would likely result in some additional development or redevelopment within the 3C zones, and to a much lesser extent in 2C zones. Construction or redevelopment could result in quantities of dust being generated, which could adversely affect local visibility due to increased PM-10 and PM-2.5 concentrations. Without mitigation, dust raised by construction in the El Portal segment under Alternative 2 could have a moderate to major but temporary effect in the immediate vicinity of individual sites. Implementation of Best Management Practices would reduce the temporary and localized air quality impacts from construction activities to a minor level. On this basis, the construction associated with the management zoning under Alternative 2 could result in localized, short-term, minor, adverse impacts on air quality. However, overall, development in El Portal under Alternative 2 could be less intensive than under Alternative 1.

In the short term, visitor levels in El Portal would remain approximately the same as existing levels, similar to Alternative 1. With the exception of housing, interim facility limits would be capped at existing levels. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than Alternative 1 due to VERP monitoring and management.

Implementation of the VERP program could have an indirect, beneficial impact on air quality in El Portal. VERP indicators do not directly address conditions specific to air quality; however, monitoring congestion on major park roads indirectly addresses localized air quality in congested areas. If the standards set for congestion levels on major park roads or other standards and indicators were not met, management actions would be required to remedy the situation.

Management actions could range from less restrictive measures to more restrictive actions described in previous sections. Management actions to address standards in the 2A, 2C and 3C zones could continue to allow for visitor use because these zones are identified as being appropriate for higher use levels.

The effects of management actions would vary by the action taken. In general, management actions such as visitor education would be expected to have little or no effect on air quality. More restrictive measures could have beneficial effects by reducing the number of vehicles or buses or the number of people recreating within the river corridor. These more restrictive measures could result in fewer vehicle trips and associated vehicle-miles traveled and a corresponding reduction in ozone precursor and particulate matter emissions. However, since Highway 140 runs through the El Portal segment, reductions in vehicle trips through the segment would be nominal. Management actions could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Conversely, management actions that result in site hardening, construction of new facilities, or removal of existing facilities could have local, short-term, minor (with implementation of Best Management Practices), adverse impacts on air quality. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas.

Overall, Alternative 2 is expected to prevent visitor use from adversely affecting ORVs in the El Portal segment. Development associated with the El Portal boundary under Alternative 2 could result in localized short-term, minor, adverse impacts on air quality during construction or redevelopment activities. However, development in El Portal under Alternative 2 could be less intensive than under Alternative 1 because of the increased corridor boundary. Overall, with respect to ozone and particulate matter, implementation of the VERP program would be expected to have a local, long-term, negligible, beneficial impact on air quality in the El Portal area relative to Alternative 1.

Impacts in Wawona. Like Alternative 1, under Alternative 2 air quality in Wawona would continue to be influenced by local sources within the park and by regional sources upwind of the park. The effects of local emissions sources would continue to be concentrated in Wawona. Emissions from local stationary sources, area sources, and mobile sources would follow emissions trends and continue to be regulated in a manner consistent with Alternative 1.

In the short term, visitor levels in Wawona would remain approximately the same as existing levels like Alternative 1. Interim facility limits would be capped at existing facility levels. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than Alternative 1 due to VERP monitoring and management.

The VERP program could have an indirect, beneficial impact on air quality in Wawona. Although VERP indicators do not directly address conditions specific to air quality, monitoring of congestion on major park roads indirectly addresses localized air quality in congested areas. If the standards set for level of congestion on major park roads or other standards and indicators were not met, management actions would be required to remedy the situation.

Management actions could range from less restrictive measures (such as education) to more restrictive actions to reduce visitor access in certain areas, as described in previous sections.

The effects of management actions would vary by the action. In general, management actions such as visitor education would be expected to have little or no effect on air quality. More restrictive measures could have beneficial effects by reducing the number of vehicles or buses or reducing the number of people recreating within the river corridor. These more restrictive measures could result in fewer vehicle trips (and associated vehicle-miles traveled) and a corresponding reduction in ozone precursor and particulate matter emissions. Therefore, management actions could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Conversely, implementation of the management actions such as site hardening, construction of new facilities, or removal of existing facilities could have local, short-term, minor (with implementation of Best Management Practices), adverse impacts on air quality during construction. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas.

Overall, Alternative 2 is expected to prevent visitor use from adversely affecting ORVs in Wawona. Certain management actions in response to VERP monitoring could result in localized, short-term, minor, adverse impacts on air quality during construction activities. However, with respect to ozone and particulate matter, VERP program would likely have a local, long-term, negligible, beneficial impact on air quality in Wawona compared to Alternative 1 because any increases in visitor numbers and associated vehicle use would likely be lower.

Summary of Alternative 2 Impacts. Overall, Alternative 2 would likely prevent visitor use from adversely affecting ORVs. Interim limits on the number of commercial tour buses allowed into Yosemite Valley (implemented to address traffic congestion) would also reduce criteria air pollutant emission levels in the Valley compared to Alternative 1. Certain VERP management actions and potential development allowable under the revised river corridor boundary in El Portal could result in localized, short-term, minor, adverse impacts on air quality during construction activities. However, development in El Portal under Alternative 2 would be less intensive than under Alternative 1. Overall, Alternative 2 would be expected to have a local, long-term, negligible, beneficial impact on air quality within the Merced River corridor compared to Alternative 1 because any increases in visitor numbers and associated vehicle use would likely be lower due to VERP monitoring and management.

Cumulative Impacts

The effects of past, present and reasonably foreseeable projects would be the same as those identified and described under Alternative 1.

Based on the revised river corridor boundary in El Portal and implementation of certain management actions in response to VERP monitoring, Alternative 2 could contribute to the cumulative number of construction sites in and near the river corridor. In most instances, construction projects undertaken as part of Alternative 2 would not overlap in time and space with cumulative construction projects; therefore, the local, short-term, major, adverse effects on air quality due to construction activities could be reduced to a minor intensity with implementation of Best Management Practices.

Over the long term, with respect to ozone, conditions in the river corridor would be determined almost entirely by regional emissions trends. The local, long-term, negligible, beneficial impact on air quality in wilderness and non-wilderness areas within the Merced River corridor associated with Alternative 2 (compared to Alternative 1) would have little effect on overall ozone levels in Yosemite National Park. As discussed under Alternative 1, the long-term, regional effect would be moderate and beneficial, primarily due to the emissions reductions expected to occur with implementation of ongoing state and federal mobile-source control programs. With respect to particulate matter, conditions in the corridor would be determined by both regional sources and local sources, and the relative influence of these two types of sources would vary on a daily and seasonal basis. Given the opposing emissions trends between primary and secondary sources of particulate matter and the varying relative contributions of regional and local emissions sources, it would be speculative to conclude that the combined effect of cumulative actions and the benefits of Alternative 2 (relative to Alternative 1) would be beneficial or adverse with respect to particulate matter; however, the opposing emissions trends would tend to diminish the magnitude of the effect, regardless of whether the effect would be beneficial or adverse.

Impairment

Management actions in response to VERP monitoring, and development that could occur as a result of the revised river corridor boundary in El Portal, could result in localized short-term, minor, adverse impacts on air quality during construction activities. However, development in El Portal under Alternative 2 would be less intensive than under Alternative 1. Overall, implementation of Alternative 2 would be expected to have a local, long-term, negligible, beneficial impact on air quality within the Merced River corridor compared to Alternative 1 because any increases in visitor numbers and associated vehicle use would likely be lower due to VERP monitoring and management. Therefore, Alternative 2 would not impair air quality in the park.

Noise

Analysis

The following discussion provides an overview of the types of impacts to the ambient noise environment associated with Alternative 2 that could occur within each segment of the Merced River corridor.

Under Alternative 2, the acoustical environment in wilderness areas would generally continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights. The acoustical environment in nonwilderness areas would generally continue to be shaped by human-caused sources of noise and by natural sources of sound. The ambient noise environment in Yosemite National Park would follow trends similar to those described under Alternative 1.

The main differences between noise conditions under Alternative 2 and those under Alternative 1 would relate to the following issues: implementation of the VERP program; interim limits on the number of commercial tour buses allowed into Yosemite Valley; and the construction or demolition activities and long-term impacts on the noise environment that could occur as a result of the change in management zoning resulting from adoption of a quarter-mile river corridor boundary in the El Portal segment of the river.

Impacts in Wilderness. The enjoyment of natural river sounds is integrated into the recreation ORVs in designated wilderness areas (the wilderness areas of the main stem and the South Fork of the Merced River). That aspect would continue to be considered for protection and enhancement in wilderness areas.

User capacity within wilderness areas of Yosemite National Park is currently addressed through trailhead quotas and monitoring of wilderness resource conditions. Under Alternative 2, use of trails in wilderness areas would continue, consistent with existing conditions and conditions under Alternative 1.

Implementation of the VERP program would provide information on the numbers of people recreating within the river corridor and the number of people at one time at selected sites. This could provide indirect information on the potential for impacts to enjoyment of natural river sounds in wilderness areas. If the recreation standards, which are also designed to protect the enjoyment of natural river sounds, were not met, management actions would be required to improve the recreational parameters to a level that meets the established standards and protects and enhances the recreation ORV in wilderness areas.

Management actions taken in response to VERP monitoring data could range from softer measures (visitor education efforts) to more restrictive measures (increased enforcement of existing regulations, restrictions on certain activities [such as stock use], and restrictions on level of use [closure of certain areas]). Educational efforts could include printed or video information that visitors are required to view and acknowledge prior to receiving a wilderness permit. The most restrictive measures could include reducing use through reduced wilderness trailhead quotas and closure of some areas. Additional management actions that could be taken in the heavily used 1C zone would include restrictions on day use, such as requiring permits for day hikers, limiting day-use access to guided groups, or reducing infrastructure (such as the cables at Half Dome).

The impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken. Management actions such as visitor education would be expected to result in local, short- and long-term, negligible, beneficial impacts on the enjoyment of natural river sounds and the broader ambient noise environment. More restrictive measures, such as the reduction of trailhead quotas or restrictions on stock use, could have beneficial effects by reducing the number of people recreating within the river corridor, and the River Protection Overlay in particular, and the number of encounters with other parties and the number of people at one time at selected sites in wilderness areas. These more restrictive measures would result in local, short- and long-term, negligible to minor, beneficial impacts on the enjoyment of natural river sounds and the broader ambient noise environment.

Overall, the acoustical environment in wilderness areas would, however, continue to experience intrusive noise generated by high-altitude aircraft overflights. In some wilderness areas, such overflights would continue to be the principal source of adverse noise impacts. Noise from high-altitude aircraft overflights may worsen over the long term, if the upward national trend in the number of aircraft flights continues. The VERP program would not address conditions related to aircraft overflights.

Due to the seasonal nature of visitation to the Wilderness segments of the river corridor coupled with the limited number of visitors allowed into the river corridor in wilderness areas as a result of the park's existing trailhead quota system, implementation of the VERP program would be expected to have a local, long-term, negligible to minor, beneficial impact on the natural enjoyment of river sounds portion of the recreation ORV and the broader ambient noise environment in wilderness areas relative to Alternative 1.

Impacts in Yosemite Valley. As under Alternative 1, under Alternative 2 the acoustical environment in the Valley would generally continue to be shaped by human-caused sources of noise and by natural sources of sound. The ambient noise environment in wilderness and nonwilderness areas of the Valley would follow trends similar to those described under Alternative 1.

In the short term, visitor levels and associated traffic in the Valley would remain approximately the same as existing levels, similar to Alternative 1. With the exception of housing, buses, and campground sites, interim facility limits would be capped at existing levels. An increase in tour buses over current levels would incrementally contribute to noise levels in those areas of

Yosemite Valley frequented by buses. This increase would result in a local, short-term, minor adverse effect on noise. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than Alternative 1 as a result of the VERP program.

Implementation of the VERP program could have an indirect, beneficial impact on the ambient noise environment in the Valley. For example, the interim limits on the number of commercial tour buses allowed into the Valley could reduce roadside noise levels in the Valley relative to Alternative 1 in the short term.

VERP indicators do not directly address conditions specific to the ambient noise environment; however, monitoring of level of congestion on major park roads and the actual number of people recreating within the River Protection Overlay could have indirect, beneficial noise impacts. If these recreational standards or other standards and indicators were not met, management actions would be required to be implemented to remedy the situation.

Management actions could range from increased visitor education, to reducing infrastructure (parking, picnic areas, etc.), to further limiting the number of day use commercial bus permits (including YARTS) or the number of cars allowed in the Valley, to construction of facilities (boardwalks, platforms, trails) to allow access to sensitive areas while protecting the natural resources, to restrictions on level of use (closure of certain areas). Management actions would likely differ depending upon which zone(s) would be affected. Management actions would be more likely to be restrictive of levels and types of visitor use in zones 2A and 2B, as these areas typically are more sensitive to visitor impacts and would be managed for lower visitor concentrations. Management actions taken to address standards in zones 2C and 2D, and in Developed Zones would likely focus more on education, site hardening and other management actions that would continue to allow for visitor use, as these areas have been identified as being appropriate for higher levels of visitor use.

Management actions such as visitor education would be expected to result in local, short- and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures could have beneficial effects by reducing the number of vehicles, buses, or the number of people recreating within the river corridor. These more restrictive measures would result in fewer people in the Valley and could indirectly result in fewer vehicle trips on park roads, associated vehicle-miles traveled and correspondingly lower roadside noise levels. On this basis, management actions could result in local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the Valley relative to Alternative 1.

Conversely, implementation of the management actions that result in site hardening, construction of new facilities (e.g., observation platforms, boardwalks, or new trails) or removal of existing facilities (e.g., parking spaces, picnic tables) could result in construction or demolition activities that could generate substantial amounts of noise during the temporary construction period. The noise levels generated by typical pieces of construction equipment are shown in table V-2.

Table V-2
Typical Noise Levels from Construction Equipment

Equipment	Typical Noise Level (dBA) 50 feet from the Source
Air Compressor	81
Backhoe	80
Bulldozer	85
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Crane, Derrick	88
Crane, Mobile	83
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pneumatic Tool	85
Pump	76
Rock Drill	98
Roller	74
Saw	76
Scraper	89
Truck	88
Rock Blasting	111 to 115 *

dBA = A-weighted decibels

* Adjusted to a distance of 50 feet; original data of 107 to 111 dBA corresponds to a distance of 75 feet. Measurement of rock blasting reflects use of non-glycerin dynamite.

SOURCE: FTA 1995, except for rock blasting; rock blasting data provided by the National Park Service (NPS 2000b).

At each individual construction or demolition site, the related noise impact would vary depending upon a number of factors, such as the number and types of equipment in operation on a given day, their usage rates, the level of background noise in the area, and the distance between sensitive uses and the construction site. However, in general, given the low background noise levels away from park roadways and the expectation of visitors that the environment be free of excessive noise sources (if not naturally quiet), the impact from construction or demolition activities would generally be local, short-term, moderate, and adverse. Implementation of mitigation measures as described in Appendix B would reduce the temporary and localized noise impacts from equipment associated with construction or demolition activities from a moderate to a minor level. On this basis, these types of management actions implemented as a result of VERP monitoring could result in localized, short-term, minor, adverse impacts on the ambient noise environment related to their construction.

Overall, Alternative 2 would be expected to prevent visitor use from adversely affecting ORVs. Certain management actions implemented in response to VERP monitoring could result in localized short-term, minor (with implementation of best management practices), adverse impacts on the ambient noise environment during construction activities. However, taken as a whole, implementation of the VERP program would be expected to have local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the Valley relative to Alternative 1, since any increases in visitor numbers, associated vehicle use, and corresponding noise levels would likely be lower.

Impacts in the Gorge. As under Alternative 1, under Alternative 2, the acoustical environment in areas zoned 1A, 2A, 2A+, and 2B would continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights and distant roadway noise. The acoustical environment in areas zoned 2C, 2D and 3C would continue to be shaped by human-caused sources of noise and by natural sources of sound. The ambient noise environment in the Gorge segment of the river corridor would follow trends similar to those described under Alternative 1. Areas zoned 2C, 2D and 3C would continue to experience a local, long-term, minor, adverse effect due to the concentration of vehicular noise in those areas.

In the short-term, visitor levels and associated vehicle use in the Gorge segment would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than for Alternative 1 due to VERP monitoring and management.

Implementation of the interim limits with VERP program could have an indirect beneficial impact on the ambient noise environment in the Gorge segment. VERP indicators do not directly address conditions specific to the ambient noise environment; however, monitoring the level of congestion on major park roads and the actual number of people recreating within the River Protection Overlay could result in indirect, beneficial noise impacts. If these recreational standards or other standards and indicators were not met, management actions would be required to remedy the situation.

Management actions could range from less restrictive measures such as education and site hardening, to more restrictive actions related to reducing visitor activities or access in certain areas, as discussed in previous sections. Management actions would likely differ depending upon which zone(s) would be affected. Since most zones in the gorge are zoned for less intensive uses, management actions in these areas would be more likely to be restrictive regarding levels of use and activities, versus site hardening to allow additional use.

The effects of these management actions would vary by the action taken, as described above under the Yosemite Valley segment. More restrictive measures could result in fewer people in the Gorge area and could indirectly result in fewer vehicle trips on park roads, associated vehicle-miles traveled, and correspondingly lower roadside noise levels. On this basis, management actions resulting from VERP monitoring could result in local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the Gorge segment.

Conversely, implementation of management actions that result in site hardening, construction of new facilities, or removal of existing facilities could have local, short-term, minor (with implementation of best management practices), adverse noise effects related to their construction, as discussed under the Yosemite Valley segment above.

Overall, Alternative 2 would be expected to prevent visitor use from adversely affecting ORVs. Overall, implementation of the VERP program would be expected to have a local, long-term, negligible to minor, beneficial impact on the ambient noise environment in the Gorge segment relative to Alternative 1, since any increases in visitor numbers, associated vehicle use and corresponding noise levels would likely be lower.

Impacts in El Portal. Under Alternative 2, the boundary for the El Portal segment of the river corridor would be based upon a quarter-mile boundary on either side of the river. The zoning in

El Portal within this alternative would contain primarily Park Operations and Administration (3C) zoning for areas north of the river, as well as for existing developed areas south of the river, and Day Use zoning (2C) and Open Space (2A) for undeveloped areas south of the river. On the north side of the river, some specific known ORVs would also be protected through Day Use (2C) zoning. Development in the El Portal area would be more restrictive under Alternative 2 than under Alternative 1, where the boundary would be limited to the 100-year floodplain or River Protection Overlay, whichever is greater. The total acreage within the El Portal segment of the river corridor under Alternative 2 would be 853 acres, which is substantially greater than the boundary presented under Alternative 1.

The proposed boundary and zoning for the El Portal segment would likely result in some additional development or redevelopment within the 3C areas, and to a much lesser extent in 2C areas. The ambient noise environment in these zones could be influenced by noise from construction, demolition, or redevelopment activities. At each individual construction or demolition site, the related noise impact would vary depending upon a number of factors, as discussed under the Yosemite Valley segment above. However, in general, given the low background noise levels away from park roadways and the expectation of visitors that the environment be free of excessive noise sources (if not naturally quiet), the impact from construction or demolition activities would generally be local, short-term, moderate, and adverse. Implementation of the mitigation measures described in Appendix B would reduce the temporary and localized noise impacts from equipment associated with construction or demolition activities from a moderate to a minor level. On this basis, the construction associated with the management scheme under Alternative 2 could result in localized, short-term, minor, adverse impacts on the ambient noise environment. However, overall, development in El Portal under Alternative 2 could be less intensive than under Alternative 1.

In the short term, visitor levels in El Portal would remain approximately the same as existing levels, similar to Alternative 1. With the exception of housing, interim facility limits would be capped at existing levels. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than for Alternative 1 due to VERP monitoring and management. The 2C and 3C zoning would allow for concentrated day use and development in the El Portal Administrative Site area, respectively. Development and increased day use opportunities could increase the number of vehicle-miles traveled within the El Portal segment of the river corridor. Development in this area could cause a local, long-term, minor, adverse effect on the ambient noise environment due to the concentration of vehicular noise and human activity in these areas.

Implementation of the interim limits with VERP program could have an indirect, beneficial impact on the ambient noise environment in the El Portal area as discussed above under the Yosemite Valley segment. Management actions could range from less restrictive measures such as education and site hardening, to more restrictive actions related to reducing visitor activities or access in certain areas. Management actions taken to address standards in the areas zoned 2A, 2C and 3C could focus more on education, site hardening, and other management actions that continue to allow for visitor use, as these areas have been identified as being appropriate for higher levels of visitor use.

The effects of these management actions within the El Portal area would vary by the action taken. In general, management actions such as visitor educational measures would be expected to result in local, short- and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures could result in fewer people or vehicles in the El Portal area and could indirectly result in fewer vehicle trips on park roads, associated vehicle-miles traveled and correspondingly lower roadside noise levels. However, since the El Portal segment includes Highway 140, a primary entrance road to the park, reductions in vehicle trips through the segment would be nominal. On this basis, management actions could result in local, short-term and long-term, negligible, beneficial effects on the ambient noise environment in the El Portal area.

Conversely, implementation of the management actions that result in site hardening, construction of new facilities or removal of existing facilities could have local, short-term, minor (with implementation of best management practices), adverse noise effects related to their construction, as discussed under the Yosemite Valley segment above.

Overall, Alternative 2 would be expected to prevent visitor use from adversely affecting ORVs. Development associated with implementation of the El Portal boundary as described for Alternative 2 and certain management actions implemented in response to VERP monitoring could result in localized, short-term, minor (with implementation of best management practices), adverse impacts on the ambient noise environment during construction or redevelopment activities. However, development in El Portal under Alternative 2 would be less intensive than under Alternative 1 as the corridor area for Alternative 2 would be increased. Overall, implementation of the VERP program would be expected to have a local, long-term, negligible to minor, beneficial impact on the ambient noise environment in the El Portal area relative to Alternative 1, since any increases in visitor numbers, associated vehicle use and corresponding noise levels would likely be lower.

Impacts in Wawona. As under Alternative 1, under Alternative 2 the acoustical environment in Wawona would generally continue to be shaped by human-caused sources of noise and by natural sources of sound. The ambient noise environment in Wawona would follow trends similar to those described under Alternative 1.

In the short term, visitor levels in Wawona would remain approximately the same as existing levels, similar to Alternative 1. Interim facility limits would be capped at existing facility levels. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than for Alternative 1 due to the VERP program.

Implementation of the interim limits with VERP program could have an indirect, beneficial impact on the ambient noise environment in Wawona, as discussed under the Yosemite Valley segment.. Management actions would be required to be implemented to remedy the situation. Again, these management actions could range from less restrictive measures such as education and site hardening, to more restrictive actions related to reducing visitor activities or access in certain areas.

The effects of these management actions would vary by action taken. In general, management actions such as visitor education would be expected to result in local, short- and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures could have beneficial effects by reducing the number of vehicles, buses, or the number of people recreating within the river corridor. These more restrictive measures would result in fewer people in Wawona and could indirectly result in fewer vehicle trips on park roads, associated vehicle-miles traveled and correspondingly lower roadside noise levels. On this basis, management actions could result in local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in Wawona.

Conversely, implementation of the management actions that result in site hardening, construction of new facilities or removal of existing facilities could have local, short-term, minor (with implementation of best management practices), adverse noise effects related to their construction, as discussed under the Yosemite Valley segment above.

Overall, Alternative 2 would be expected to prevent visitor use from adversely affecting ORVs. Certain management actions implemented in response to VERP monitoring could result in localized short-term, minor to moderate (with implementation of best management practices), adverse impacts on the ambient noise environment during construction activities. However, taken as a whole, implementation of the VERP program overall would be expected to have local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in Wawona relative to Alternative 1, since any increases in visitor numbers, associated vehicle use, and corresponding noise levels would likely be lower.

Summary of Alternative 2 Impacts. As under Alternative 1, the acoustical environment in wilderness areas would not be affected by Alternative 2, but would continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights. The acoustical environment in nonwilderness areas would continue to be shaped by human-caused sources of noise and by natural sources of sound.

Overall, Alternative 2 would be expected to prevent visitor use from adversely affecting ORVs. Interim limits on the number of commercial tour buses allowed into Yosemite Valley, which would be intended to address traffic congestion, would also reduce roadside noise levels in the Valley relative to Alternative 1. Certain management actions implemented in response to VERP monitoring, and development that could occur as a result of the revised river corridor boundary in El Portal, could result in localized, short-term, minor to moderate (with implementation of best management practices), adverse impacts on the ambient noise environment during construction activities. However, development in El Portal under Alternative 2 would be less intensive than under Alternative 1 as the corridor area would be increased. Less intensive development could have a local, long-term, negligible to minor, beneficial impact on the ambient noise environment in the El Portal area.

Overall, implementation of Alternative 2 would be expected to have a local, long-term, negligible, beneficial impact on ambient noise levels in nonwilderness areas within the Merced River corridor relative to Alternative 1, since any increases in visitor numbers, associated vehicle use, and corresponding noise levels would likely be lower due to the VERP program.

Cumulative Impacts

Cumulative effects to the ambient noise environment are described under Alternative 1.

Based on the revised river corridor in El Portal and implementation of certain management actions that could be implemented in response to VERP monitoring, Alternative 2 could contribute to the cumulative number of construction sites in and near the corridor; in most instances, construction projects undertaken as part of Alternative 2 would not overlap in time and space with cumulative construction projects, and thus, the local, short-term, adverse effects on noise due to construction activities could be reduced to a moderate intensity with implementation of best management practices. Over the long term, in wilderness areas, noise impacts in the corridor would be determined almost entirely by cumulative trends in air travel rather than by in-park noise sources under Alternative 2; as discussed under Alternative 1, if the national trend in air travel continues to increase, it could result in a local, long-term, minor, adverse effect on the ambient noise environment. In nonwilderness areas, the cumulative actions that would tend to reduce motor vehicle trips would result in a local, long-term, moderate, adverse effect on noise levels in the immediate vicinities of such facilities due to the concentration of vehicular activity, but could result in a local, long-term, moderate, beneficial effect in the eastern portion of the Valley due to reduced vehicle trips and related noise and related to the type of bus technology used for transit purposes.

Taken as a whole, Alternative 2, with implementation of the VERP program and its more restrictive development scheme in the El Portal area, would have a local, long-term, negligible to minor, beneficial impact on the ambient noise environment in the Merced River corridor relative to Alternative 1.

Impairment

Management actions implemented in response to VERP monitoring, and development that could occur as a result of the revised river corridor boundary in El Portal, could result in localized short-term, minor (with implementation of best management practices), adverse impacts to the noise environment and the soundscapes in the vicinities of construction or demolition projects. However, development in El Portal under Alternative 2 would be less intensive than under Alternative 1. Overall, Alternative 2 with implementation of the VERP program and its more restrictive development scheme in the El Portal area would have a local, long-term, negligible to minor, beneficial impact on the ambient noise environment in the Merced River corridor relative to Alternative 1, since any increases in visitor numbers, associated vehicle use and corresponding noise levels would likely be lower due to VERP monitoring and management. Therefore, implementation of Alternative 2 would not impair park soundscapes.

Cultural Resources

Archeological Resources

Analysis

The following discussion provides an overview of the types of impacts to archeological resources that could occur within each segment of the Merced River corridor under Alternative 2.

Management actions associated with the redirection of visitors from areas with known archaeological resources and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Archeological resources within Yosemite's wilderness include historic and prehistoric resources related to occupation and homesteading, hunting, travel and trade, the U.S. Cavalry, and wilderness tourism.

User capacity within wilderness areas of Yosemite National Park is addressed through wilderness trailhead quotas and monitoring of wilderness resource conditions. Implementation of the interim limits with VERP program for the wilderness areas would result in additional monitoring of indicators within wilderness areas. VERP indicators to be monitored in wilderness zones are listed in table II-5.

The interim limits within the wilderness call for no new campgrounds or trails, therefore there are no anticipated new effects to archeological resources due to interim limits.

In the event that VERP monitoring indicates that resource and ORV conditions are not meeting established standards, management would implement measures to bring conditions back within standards. These management actions would range from efforts to educate visitors about less-used areas, to more restrictive measures, such as additional reductions in trailhead quotas, reductions in accommodations at High Sierra Camps, restrictions on certain activities, enforcement of specific wilderness itineraries, or temporary to permanent closure of certain areas. Additional management actions that could be taken in the Heavy Use Trail (1C) zone would include restrictions on day use, such as requiring permits for day hikers, limiting day-use access to guided groups, or reducing infrastructure (such as the cables at Half Dome).

The impacts of the management actions implemented as a result of VERP would vary depending on the action taken. Management actions related to visitor education are likely to reduce impacts to archeological sites by encouraging more dispersion of visitors within wilderness areas and changing visitor behaviors by providing information on activities that cause adverse impacts. Education efforts are expected to result in local, short- and long-term, minor, beneficial impacts on archeological resources. More restrictive measures, such as reducing trailhead quotas, restricting stock use, and limiting day-use access in heavily used areas to users with permits or guided groups, would likely have local, long-term, moderate, beneficial effects on the archeological resources due a potential decrease in degradation of archeological deposits.

Impacts in Yosemite Valley. The archeological resources within Yosemite Valley include several historic and prehistoric sites and districts that relate to homesteading, long-term and seasonal occupation, early tourism, the U.S. Cavalry, historic roads and trails, and early park administration.

The VERP indicators to be monitored in the various zones in the Valley are listed in table II-5. Indicators that relate to archeological resources include the length of social trails in meadows, actual number of people recreating within the River Protection Overlay, and riverbank erosion that is accelerated or caused by visitor use. Management actions would be implemented if monitoring of the VERP indicators shows that standards for these indicators are not being met. Management actions could include increased visitor education, restricting access to sensitive areas, restricting or limiting activities (swimming, picnicking, etc.) in specific areas, improving roads to accommodate higher volumes, or constructing boardwalks to allow access to sensitive areas while protecting the natural resources. Management actions could also include closure and restoration of areas adversely affected by visitor use.

The effects of these additional management actions within the Valley would vary by the action taken. Educational measures designed to change visitor behaviors in ways that reduce vegetation trampling, riverbank erosion, and water pollution would likely improve the natural and cultural setting, and result in local, short- and long-term, negligible to minor, beneficial effects on archeological resources. More restrictive measures, such as limits on activities near the river, reduced activity levels, or restrictions on car and/or bus access to Yosemite Valley, would benefit the archeological resources by reducing opportunities for site degradation. These measures could result in short-term or long-term, moderate, beneficial impacts to archeological resources. Site hardening activities, such as construction of boardwalks, picnic facilities, or roadway improvements, could result in adverse effects on archeological resources if proposed facilities would damage deposits or increase the likelihood of visitor-related damage. These actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement and other Merced River Plan elements. The effects would likely be local, long term, negligible to minor, and adverse.

Interim limits in Yosemite Valley allow for an increase in camping in the Camping (3A) zones. No new parking or overnight accommodations would be added. The potential for new or redeveloped campgrounds in the Valley could adversely impact archeological resources. These actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement and other Merced River Plan elements which require the protection of ORVs on a segment-wide basis. The interim limits would also allow for an increase in tour buses over current levels. Potential tour bus increases would have a negligible to minor impact on archeological resources, as these visitors typically stay on site-hardened areas such as parking and adjacent roadside areas. The effects would likely be local, long term, minor, and adverse. Alternative 2 would have an overall local, long-term, moderate, beneficial impact on archeological resources, except for possible future site-hardening activities, which have the potential to cause a local, long-term, minor, adverse impact on archeological resources.

Impacts in the Gorge. The archeological resources within the Gorge segment include historic and prehistoric sites related to occupation, the Civilian Conservation Corps, early roads and trails, road development, and early tourism.

The VERP indicators to be monitored in the gorge zones are listed in table II-5. The effects of VERP management actions within the Gorge would vary by the action taken. Educational measures would be expected to result in local, short- and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures, such as limits on vehicle access and parking, limits on activities near the river, or overall reduced visitor levels, would likely provide for a less crowded environment. These measures could result in short-term or long-term, moderate, beneficial impacts to archeological resources. Site-hardening activities, such as construction of boardwalks, picnic facilities, or roadway improvements, could result in some adverse effects on archeological resources, but would be limited to the small areas designated for higher levels of development and use—Attraction (2D) and Park Operations and Administration (3C) zones. Because the park is mandated to protect the cultural ORV, the effects of new development would likely be local, long term, negligible to minor, and adverse.

Interim limits in the Gorge segment would maintain day-visitor parking at the existing levels; therefore, no new impacts are anticipated. Alternative 2 would have an overall local, long-term, moderate, beneficial impact on archeological resources in the Gorge, except for site-hardening activities, which have the potential to cause a local, long-term, minor, adverse impact on archeological resources.

Impacts in El Portal. Archeological resources for El Portal consist of some of the oldest prehistoric sites within the Merced River corridor. Prehistoric and historic archeological sites and districts in El Portal include examples of villages, homesteads, early tourism, as well as the mining, railroad, and timber industries.

The boundary for the El Portal segment of the river in Alternative 2 is based upon a quarter-mile boundary. The zoning proposed for the El Portal segment under Alternative 2 calls for Park Operations and Administration (3C) and Day Use (2C) north of the river. South of the river, existing developed areas are zoned 3C, undeveloped areas west of the levee are zoned 2C, and undeveloped areas east of the levee are zoned 2A (Undeveloped Open Space). Alternative 2 provides a total of 411 acres of Park Operations and Administration zoning (3C), 192 acres of Day Use zoning (2C), and 250 acres of Open Space zoning (2A).

The area zoned 3C could allow for the development of roads, interpretive facilities, administrative facilities and employee housing. The area zoned 2C could allow construction of new day use facilities such as bicycle trails, restrooms, picnic tables, and paved trails. The area zoned 2A could allow construction of unpaved trails and limited interpretive signs.

Under Alternative 2, interim limits would not allow for any increase in parking, visitor services, or any additional park facilities above current levels. In the long term, the proposed boundary and zoning designations for the El Portal segment are likely to result in additional development or redevelopment within the 3C zones, but the 2C and 2A zoning along much of the corridor would substantially limit new development in El Portal. This increased development north of the river and in the trailer village south of the river, could result in an adverse effect to archeological resources. However, the majority of known, undisturbed archeology sites are not located in 3C zones. The effect of new development on archeological resources within the segment would vary depending on the nature of the development and its proximity to archeological sites. All development would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement.

New development would also be subject to the consistent set of criteria and considerations adopted in the Merced River Plan, as well as current park management policies. These management policies guide how actions could be implemented in order to minimize adverse effects to cultural resources. All ORVs must be protected on a segment-wide basis regardless of the zoning designation or whether the resources are in or outside of the river corridor boundary. Therefore, the adverse effect of new development on archeological resources within the segment would likely be local, long-term, and negligible to minor.

The application of the revised El Portal river corridor boundary under this alternative is expected to have a local, long-term, moderate, beneficial effect on archeological resources in the El Portal segment compared to Alternative 1, because of the more stringent zoning restrictions.

Implementation of a VERP program in El Portal would include monitoring of the indicators identified for areas zoned 2A, 2C, and 3C. The indicators that relate to archeological resources for these management zones include actual number of people recreating within the River Protection Overlay, number of social trails, number of social trails, and riverbank erosion that is accelerated or caused by visitor use. The effects of management actions would vary by the action taken. Educational measures would likely result in local, short- and long-term, negligible to minor, beneficial effects. More restrictive measures, such as limits on vehicle access and parking, limits on activities near the river, or overall reduced visitor levels, are expected to provide for a less crowded environment. These measures could result in short-term or long-term, moderate, beneficial impacts to archeological resources. Site hardening activities, such as construction of boardwalks, picnic facilities, or roadway improvements, could result in adverse effects on archeological resources. These actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement and other Merced River Plan elements. The effects would likely be local, long term, negligible to minor, and adverse.

Impacts in Wawona. The archeological resources in Wawona include historic and prehistoric sites and districts that relate to homesteading, long-term and seasonal occupation, early tourism, the U.S. Cavalry, historic roads and trails, and early park administration.

Implementation of the VERP program with interim limits throughout the Wawona segments would include monitoring of indicators described in table II-5. Indicators that relate to archeological resources include (1) length of social trails in meadows, (2) actual number of people recreating within the River Protection Overlay, and (3) riverbank erosion that is accelerated or caused by visitor use. The VERP process would result in management actions being taken to address conditions that do not meet the standards set for each zone. The intensity of the measures taken would depend on the condition of the resources and the zoning of the area.

The Wawona segment is primarily zoned for low-intensity visitor use, with very limited areas for higher intensity uses (e.g., the golf course, Pioneer Yosemite History Center). Therefore, management actions taken to address VERP monitoring are likely to focus on more restrictive measures as opposed to measures such as site hardening. Educational efforts are expected to result in local, long-term, negligible to minor, benefits to archeological resources, as discussed above. More restrictive measures, such as restrictions on activities or use levels in various areas, would likely result in short-term or long-term, moderate, beneficial impacts to archeological resources. However, the effect of new development on archeological resources within the segment would vary depending on the nature of the development and its proximity to archeological sites. All development would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and the elements of the Merced River Plan.

In the area below Wawona, which is zoned for Undeveloped Open Space (2A+), VERP management actions taken to address the number of visitors and social trails are likely to be focused on education and more restrictive measures to reduce visitor levels and restore the natural resources. Site hardening would not be appropriate in this area. Education efforts to limit the number of visitors and reduce impacts to natural resources would likely have long-term, negligible to minor, beneficial effects on archeological resources. More restrictive measures, such as enforced limits on the number of visitors accessing the area, would benefit archeological resources by decreasing the likelihood for visitor-related damage such as surface collection, erosion, and trampling.

Interim limits in Wawona allow for an increase in employee housing in the limited 3C zones that exist in Wawona. No new parking, overnight visitor accommodations, or camping will be added. New employee housing could adversely impact archeological resources; some of these archeological resources have been previously disturbed and lack integrity, but many remain relatively intact. These actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement and the elements of the Merced River Plan. The effects would likely be local, long-term, minor to major, and adverse.

Summary of Alternative 2 Impacts. Compliance with existing park policies and federal regulations such as the National Historic Preservation Act and implementation of a VERP program with interim limits would help ensure that the archeological component of the cultural ORVs in each river segment are protected and enhanced.

Implementation of management actions to address information from VERP monitoring is expected to improve natural and cultural conditions within the corridor. The improvements to the natural setting and reduced crowding and congestion would likely provide benefits to archeological resources within the corridor due to fewer visitor-related impacts such as trampling, erosion, surface collection, and vandalism. If restrictive management actions are required to achieve these conditions, there would be local, long-term, minor benefits to archeological resources. Management zones in El Portal that allow for increased levels of development could have a local, long-term, negligible, adverse effect on archeological resources.

Overall, the implementation of the VERP program with interim limits, based on the management zoning and other elements in the Merced River Plan, would result in long-term, minor to moderate, beneficial impacts on archeological resources compared to Alternative 1.

Cumulative Impacts

A detailed discussion of impacts from past, present, and future projects is provided under Alternative 1. The cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, moderate, adverse impact on archeological resources. Overall, these cumulative actions in combination with Alternative 2 could have a net long-term, moderate, adverse impact on archeological resources within the Merced River corridor.

Impairment

Alternative 2 would have local, long-term, minor to moderate, beneficial impacts as well as local, long-term, minor, adverse impacts on archeological resources. Since adverse impacts are expected to be minor, this alternative would not impair the park's archeological resources for future generations.

National Historic Preservation Act Section 106 Summary

Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in "no effect" to historic properties listed in or eligible for listing in the National Register of Historic Places, because the plan does not prescribe specific action. Any future actions allowed under the proposed alternative would undergo environmental review to determine potential effects on historic properties.

Traditional Cultural Resources

Analysis

The following discussion provides an overview of the types of impacts to traditional cultural resources that could occur within each segment of the Merced River corridor from implementation of the park's user capacity management program with a VERP program. Effects on traditional cultural resources due to the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Management actions associated with the redirection of visitors from areas with known traditional cultural resources and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Traditional cultural resources in the wilderness include continuing uses such as the travel/trade routes connecting the east and west slopes of the Sierra Nevada range.

The impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken. Management actions related to visitor education are likely to reduce impacts to traditional cultural resources by encouraging more dispersion of visitors within wilderness areas and changing visitor behaviors by providing information on activities that result in adverse impacts. Education efforts are expected to result in local, short- and long-term, negligible, beneficial impacts on traditional cultural resources. More restrictive measures, such as reducing trailhead quotas, restricting stock use, and limiting day-use access in heavily used areas to users with permits or guided groups, would likely have local, long-term, negligible, beneficial effects on traditional cultural resources.

Implementation of restrictive measures that reduce wilderness use beyond the existing trailhead quotas in response to VERP monitoring would likely have a local, long-term, negligible, beneficial impact on traditional cultural resources due to potentially reduced crowding. American Indian access to these resources in the wilderness will continue to be guided by the Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities (NPS 1997a). As per this agreement, restrictive measures on wilderness use would not apply to American Indians conducting traditional activities.

The interim limits within the wilderness call for no new campgrounds or trails; therefore, there are no anticipated new effects to traditional cultural resources due to interim limits.

Impacts in Yosemite Valley. Traditional cultural resources within Yosemite Valley encompass many natural and cultural features throughout the Valley that maintain their traditional importance used by local American Indian groups. These resources include gathering areas, religious sites, village sites, and cemeteries.

VERP indicators to be monitored in the various zones in the Valley are listed in table II-5. The indicator most directly related to traditional cultural resources is the extent/magnitude of three traditionally used plant species. Management actions would be implemented if monitoring of the

VERP indicators shows that standards for these indicators are declining or not being met. Management actions could include increased visitor education, restricting access to sensitive areas, restricting or limiting activities (swimming, picnicking, etc.) in specific areas, or constructing boardwalks to allow access to sensitive areas while protecting the traditional cultural resources. Management actions could also include closure and restoration of areas adversely affected by visitor use.

The effects of these management actions within the Valley would vary by the action taken. Educational measures designed to change visitor behaviors in ways that reduce vegetation trampling, riverbank erosion, and water pollution are expected to improve the natural and cultural setting, and result in local, short- and long-term, negligible to minor, beneficial effects on traditional cultural resources. More restrictive measures, such as limits on activities near the river, reduced activity levels, or restrictions on car and/or bus access to Yosemite Valley, would benefit the traditional cultural resources by reducing opportunities for resource degradation, such as trampling and erosion. American Indian access to these resources will continue to be guided by the park's agreements with the tribes such as the Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities (NPS 1997a). Therefore, these measures could result in short-term or long-term, moderate to major, beneficial impacts to traditional cultural resources through resource protection.

Interim limits in Yosemite Valley allow for an increase in camping in the Camping (3A) zones. No new parking or overnight accommodations would be added. The potential for new or redeveloped campgrounds in the Valley could result in local, minor, adverse impacts on traditional cultural resources, depending on location or campsite design. These actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement and would be guided by the park's agreements with local American Indian groups. The interim limits would also allow for an increase in tour buses over current levels. Potential tour bus increases would have a negligible to minor adverse impact on traditional cultural resources, as these visitors typically stay on site-hardened areas, such as parking and adjacent roadside areas. The effects would likely be local, long term, negligible, and adverse. Alternative 2 would have an overall local, long-term, moderate to major, beneficial impact on traditional cultural resources in the Yosemite Valley segment.

Impacts in the Gorge. The traditional cultural resources for the Gorge segment include gathering areas and villages. The effects of VERP management actions within the Gorge would vary by the action taken. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures, such as limits on activities near the river or reduced activity levels, would benefit traditional cultural resources by reducing opportunities for resource degradation, such as trampling and erosion. American Indian access to these resources will continue to be guided by the park's agreements with the tribes, such as the Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities (NPS 1997a). Therefore, these measures could result in local, short-term or long-term, moderate, beneficial impacts to traditional cultural resources through resource protection.

Interim limits in the Gorge segment would maintain day-visitor parking at the existing levels; therefore, no new impacts are anticipated in the short term. Alternative 2 would have an overall local, long-term, moderate, beneficial impact on traditional cultural resources in the Gorge through VERP monitoring.

Impacts in El Portal. Traditional cultural resources in El Portal consist of, but are not limited to, gathering areas, cemeteries, geological features of traditional spiritual importance, and prehistoric and historic village sites. Like Yosemite Valley, contemporary associated tribes consider all of El Portal to be a traditional use area.

The boundary for the El Portal segment of the river in Alternative 2 was based upon a quarter-mile boundary. The zoning proposed for the El Portal segment under Alternative 2 calls for Park Operations and Administration (3C) and Day Use (2C) north of the river. South of the river, existing developed areas are zoned 3C, undeveloped areas west of the levee are zoned 2C, and undeveloped areas east of the levee are zoned 2A (Undeveloped Open Space). Alternative 2 provides a total of 411 acres of Park Operations and Administration zoning (3C), 192 acres of Day Use zoning (2C), and 250 acres of Open Space zoning (2A).

The area zoned 3C could allow for the development of roads, interpretive facilities, administrative facilities and employee housing. The area zoned 2C could allow construction of new day use facilities such as bicycle trails, restrooms, picnic tables, and paved trails. The area zoned 2A could allow construction of unpaved trails and limited interpretive signs.

Under Alternative 2, interim limits would not allow for any increase in parking, visitor services, or any additional park facilities above current levels. In the long term, the proposed boundary and zoning designations for the El Portal segment are likely to result in additional development or redevelopment within the 3C zones, but the 2C and 2A zoning along much of the corridor would substantially limit new development in El Portal. Increased development north of the river and in the trailer village south of the river could result in adverse impacts. However, the effect of new development on traditional cultural resources would vary depending on the nature of the development and its proximity to traditional cultural resources. If the construction of proposed new facilities temporarily leads employees or visitors closer to a traditional cultural resource, the effect could be local, short term, minor, and adverse. If the facilities increase visitor or employee exposure to traditional cultural resources, the effect could be local, long term, minor, and adverse. Conversely, if the proposed new facilities avoid traditional cultural resources and reduce visitor/employee-related damage to these resources, the 3C management zoning could have a local, long-term, negligible to minor, beneficial impact.

The areas zoned Day Use (2C) south and north of the river allows for development of trails, restrooms, and picnic areas. The areas zoned Open Space (2A) south of the river allows minimal development. Increased development south of the river in the small 2C areas could result in a short-term or long-term, minor, adverse impact on traditional cultural resources. If the construction of new development temporarily leads visitors closer to traditional cultural resources, the effect could be local, short term, minor, and adverse. If the development increases visitor exposure to traditional cultural resources, the effect could be local, long term, minor, and adverse.

None of the development described above would occur unless the following elements were satisfied. All development would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement. New development would also be subject to the consistent set of criteria and considerations adopted in the Merced River Plan (which requires the protection of ORVs), as well as the implementation of current park management policies. These management policies guide how actions could be implemented to minimize adverse effects to cultural resources.

Moreover, this alternative includes implementation of a VERP program within the El Portal segment which would include monitoring of the indicators identified for areas zoned 2A, 2C, and 3C. The indicator most directly related to traditional cultural resources is the extent/magnitude of three traditionally used plants. The effects of management actions would again vary by the action taken. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures, such as limits on activities near the river or reduced activity levels, would benefit traditional cultural resources by reducing opportunities for resource degradation such as trampling and erosion. American Indian access to these resources will continue to be guided by the park's agreements with the tribes such as the Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities (NPS 1997a). Therefore, these measures could result in local, short-term or long-term, moderate to major, beneficial impacts to traditional cultural resources through resource protection.

Overall, local, short- and long-term, negligible to minor, adverse impacts and local, short- and long-term, minor to moderate, beneficial impacts on traditional cultural resources could occur as a result of future actions that could be implemented within the revised river corridor. However, adverse effects would be reduced in intensity under Alternative 2 by the application of more stringent zoning and other Merced River Plan elements within the larger, revised river corridor boundary (as compared to Alternative 1), which would require the application of a consistent set of criteria and considerations to a larger area. The implementation of a VERP program would further protect traditional cultural resources, resulting in long-term, moderate, beneficial impacts in El Portal.

Impacts in Wawona. Traditional cultural resources in Wawona include gathering areas, cemeteries, and village sites.

Implementation of the VERP program throughout the Wawona segments would include monitoring of indicators described in table II-5. The indicator most directly related to traditional cultural resources is the extent/magnitude of three traditionally used plants. The VERP process would result in management actions being taken to address conditions that are declining or do not meet the standards set for each zone. These management actions could range from less restrictive measures, such as education, to more restrictive actions related to reducing visitor activities or access in certain areas. The intensity of the measures taken would depend upon the condition of the resources and the zoning of the area.

The Wawona segment is primarily zoned for low-intensity visitor use, with very limited areas for higher intensity uses (e.g., the golf course, Pioneer Yosemite History Center). Therefore, management actions taken to address VERP monitoring are likely to focus on more restrictive measures as opposed to measures such as site hardening. Educational efforts taken in response to monitoring of natural resource and social conditions are expected to result in local, long-term, negligible to minor benefits to traditional cultural resources, as discussed above. More restrictive measures, such as limits on activities near the river or reduced activity levels, would benefit traditional cultural resources by reducing opportunities for resource degradation, such as trampling and erosion. American Indian access to these resources will continue to be guided by the park's agreements with the tribes, such as the Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities (NPS 1997a). Therefore, these measures could result in local, short-term or long-term, moderate, beneficial impacts to traditional cultural resources through resource protection.

In the Below Wawona segment, which is zoned for Undeveloped Open Space (2A+), VERP management actions to address the number of people and social trails would likely be focused on education and more restrictive measures to reduce visitor levels and restore natural resources. Site hardening would not be appropriate in this area. Educational efforts in response to VERP monitoring of natural resource and social conditions are expected to result in local, long-term, negligible to minor, benefits to traditional cultural resources, as discussed above. More restrictive measures, such as limits on activities near the river or reduced activity levels, would benefit traditional cultural resources by reducing opportunities for resource degradation, such as trampling and erosion. American Indian access to these resources will continue to be guided by the park's agreements with the tribes, such as the Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities (NPS 1997a). Therefore, these measures could result in local, short-term or long-term, moderate, beneficial impacts to traditional cultural resources through resource protection.

Interim limits in the Wawona segment would allow for an increase in employee housing in the small areas zoned Park Operations and Administration (3C). No new parking, overnight visitor accommodations, or camping would be added. New employee housing could result in local impacts on traditional cultural resources. Any potential adverse effects would be mitigated because these actions would be subject to site-specific planning and compliance, guided by the park's agreements with the tribes, and undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement. The Merced River Plan's criteria and considerations would also apply to any new development. The effects on traditional cultural resources under Alternative 2 would likely be local, long term, minor, and adverse.

Summary of Alternative 2 Impacts. Compliance with existing park policies, including the 1999 Programmatic Agreement; the 1997 Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities; and federal laws such as the National Historic Preservation Act, American Indian Religious Freedom Act, and Native American Graves Protection and Repatriation Act would help ensure that the cultural ORVs in each river segment are being protected and enhanced.

Implementation of management actions to address information from VERP monitoring is expected to improve natural and cultural conditions within the corridor. The improvements to the natural setting and reduced crowding and congestion would likely provide benefits to traditional cultural resources within the corridor. If restrictive management actions are required to achieve these natural and social conditions, there would be moderate benefits to traditional cultural resources related to an improved natural environment. Implementation of the larger corridor boundary and management zones in El Portal under Alternative 2 would allow for less development than under Alternative 1 and would likely result in a negligible, beneficial effect on traditional cultural resources because new facilities would be designed to avoid traditional cultural resources.

Overall, the implementation of the VERP program with interim limits, based on the management zoning and other elements in the Merced River Plan, would result in long-term, minor to moderate, beneficial impacts on traditional cultural resources and potentially long-term, minor, adverse effects on some traditional cultural resources due to increased development near the resources.

Cumulative Impacts

A detailed discussion of impacts from past, present, and future projects is provided under Alternative 1. Overall, these cumulative actions in combination with Alternative 2 could have a net long-term, minor, beneficial impact on traditional cultural resources within the Merced River corridor due to increased efforts in natural resource restoration. It could also result in a long-term, minor, adverse impact due to increased development, and visitor-related damage.

Impairment

Because impacts to traditional cultural resources are primarily beneficial, Alternative 2 is not expected to impair the park's traditional cultural resources for future generations.

National Historic Preservation Act Section 106 Summary

Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in "no effect" to historic properties listed in or eligible for listing in the National Register of Historic Places, because the plan does not prescribe specific action. Any future actions allowed under the proposed alternative would undergo environmental review to determine potential effects on historic properties.

Historic Sites, Structures, and Landscapes

Analysis

The following discussion provides an overview of the types of impacts to historical sites, structures, and landscapes that could occur within each segment of the Merced River corridor from implementation of the park's user capacity management program with a VERP program. Effects on these resources due to the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Historic sites, structures, and landscapes in the wilderness include the Merced Lake High Sierra Camp, John Muir Trail, remains of the original Yosemite Grant boundary fence, U.S. Cavalry trails, and sites associated with early stock grazing.

The impacts of the management actions implemented as a result of VERP would vary depending on the action taken. The indicator most closely related to historic sites, structures, and landscapes is people at one time at selected sites. Management actions related to visitor education are expected to reduce impacts to historic sites, structures, and landscapes by encouraging more dispersion of visitors within wilderness areas and changing visitor behaviors by providing information on activities that cause adverse impacts. Education efforts would be likely result in local, short and long-term, minor, beneficial impacts to historic resources. If VERP indicates that more restrictive measures are needed that reduce wilderness use, there would be a local, long-term, negligible to minor, beneficial effects on historic sites, structures, and landscapes due to a potential decrease in visitor-related damage, such as trampling, vandalism, and wear and tear.

The interim limits within the Wilderness segments calls for no new campgrounds or trails; therefore, there are no anticipated new effects to historic sites, structures, and landscapes due to interim limits.

Impacts in Yosemite Valley. Historic sites, structures, and landscapes in Yosemite Valley include the Yosemite Valley Historic District, which consists of historic bridges, a campground, orchards, trails, roads, residences, administrative facilities, and visitor accommodations. The Valley also contains several National Register-eligible or -nominated historic buildings and three National Historic Landmarks: the LeConte Memorial Lodge, the Ranger's Club, and The Ahwahnee.

The indicators to be monitored in the various zones in the Valley are listed in table II-5. Indicators that are most relevant to historic sites, structures, and landscapes include (1) length of social trails in meadows and (2) extent of and diversity of cover of riparian vegetation within the river corridor. The effects of VERP management actions within the Valley in response to VERP monitoring would vary by the action taken. Educational measures designed to change visitor behaviors in ways that reduce vegetation trampling, riverbank erosion, and social trails, are expected to improve the natural and cultural setting and therefore result in local, short- and long-term, negligible to minor, beneficial effects on historic sites, structures, and landscapes. More restrictive measures, such as limits on activities near the river, reduced activity levels, or restrictions on car and/or bus access to Yosemite Valley would benefit these resources by reducing opportunities for visitor-related damage such as vandalism, erosion, and wear and tear. These measures could result in short-term or long-term, moderate, beneficial impacts to historic sites, structures, and landscapes. Site hardening activities, such as construction of boardwalks, picnic facilities, or roadway improvements, could result in adverse effects on historic landscapes if the new design is incompatible with the character of the landscape. This is highly unlikely because these actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement and the Yosemite Valley design guidelines (NPS 2004c). The Merced River Plan's criteria and considerations would also apply. If the design is compatible with the historic landscape character, and if the new facilities reduce the likelihood of visitor-related damage to historic sites, structures, and landscapes, then site hardening activities could have a local, long-term, moderate, beneficial effect on these resources.

Interim limits in Yosemite Valley would allow for an increase in camping in the areas zoned 3A. No new parking or overnight accommodations would be added. The addition of new or redeveloped campgrounds in the Valley would not impact historic sites, structures, or landscapes. The interim limits would also allow for an increase in tour buses over current levels. Potential tour bus increases would have a negligible to minor adverse impact on historic sites structures and buildings, as these visitors typically stay on site-hardened areas, such as parking and adjacent roadside areas.

Impacts in the Gorge. Historic sites, structures, and landscapes in the Gorge segment include the Merced Canyon Travel Corridor and the remaining structures associated with the Yosemite Valley Hydroelectric Power Plant.

The effects of VERP management actions within the Gorge would vary by the action taken. The indicators that are most relevant to historic sites, structures, and landscapes include (1) length of social trails in meadows and (2) extent of and diversity of cover of riparian vegetation within the river corridor. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures, such as limits on activities near the river or reduced activity levels, would benefit these resources by reducing opportunities for visitor-related damage, such as vandalism, erosion, and wear and tear. These measures could result in short-term or long-term, negligible to minor, beneficial impacts to historic sites, structures, and landscapes. Site-hardening activities, such as construction of picnic facilities or roadway improvements, could result in adverse effects on historic landscapes if the new design is incompatible with the character of the landscape. This is highly unlikely because these actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement and the design guidelines. The Merced River Plan's criteria and considerations would also apply. If the design is compatible with the historic landscape character, and if the new facilities reduce the likelihood of visitor-related damage to historic sites, structures, and landscapes, then site hardening activities could have a local, long-term, minor, beneficial effect on these resources.

Interim limits in the Gorge segment would maintain day-visitor parking at the existing levels; therefore, no new impacts are anticipated.

Impacts in El Portal. Historic sites, structures, and landscapes for El Portal consist of the Old El Portal cultural landscape, the Murchison (National Lead Company) structures, railroad houses, the chapel, the old store, the El Portal Market, the old hotel (Yosemite Institute administrative offices), Bagby Station, and other sites and structures related to early industry, homesteading, and tourism in the Merced River corridor. Some of these structures are privately owned or used only as National Park Service or park partner's administrative facilities. Because these structures are not open to the public, they are unlikely to experience adverse effects from visitor use.

The boundary for the El Portal segment of the river in Alternative 2 was based upon a quarter-mile boundary. The zoning proposed for the El Portal segment under Alternative 2 calls for Park Operations and Administration (3C) and Day Use (2C) north of the river. South of the river, existing developed areas are zoned 3C, undeveloped areas west of the levee are zoned 2C, and undeveloped areas east of the levee are zoned 2A (Undeveloped Open Space). Alternative 2 provides a total of 411 acres of Park Operations and Administration zoning (3C), 192 acres of Day Use zoning (2C), and 250 acres of Open Space zoning (2A).

The area zoned 3C could allow for the development of roads, interpretive facilities, administrative facilities and employee housing. The area zoned 2C could allow construction of new day use facilities such as bicycle trails, restrooms, picnic tables, and paved trails. The area zoned 2A could allow construction of unpaved trails and limited interpretive signs.

Under Alternative 2, interim limits would not allow for any increase in parking, visitor services, or any additional park facilities above current levels. In the long term, the proposed boundary and zoning designations for the El Portal segment is likely to result in additional development or redevelopment within the 3C zones, but the 2C and 2A zoning along much of the corridor would substantially limit new development in El Portal. Increased development north of the river could adversely affect the Old El Portal Historic Landscape if the new design is incompatible with the character of the landscape. Likewise, additional development could increase the number of visitors, employees, and residents exposed to these resources and therefore increase the likelihood of damage such as vandalism, erosion, and wear and tear. The 3C zoning south of the river at the trailer village could result in increased development on or near historic sites and structures. Increased numbers of visitors, employees, and residents exposed to these resources could adversely affect historic sites and structures.

The areas zoned Day Use (2C) south of the river would allow for development of trails, restrooms, and picnic areas. The areas zoned Open Space (2A) would allow for minimal development. The additional development could adversely affect historic sites within the segment due to the increase in visitor contact with these resources. However, the potential actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and design guidelines. Therefore, the adverse effects of new development would likely be local, long term, and negligible. Conversely, if the new facilities reduce the likelihood of visitor- or employee-related damage to historic sites then site-hardening activities could have a local, long-term, moderate, beneficial effect on these resources.

Implementation of VERP within the El Portal segment would include monitoring of the indicators identified for areas zoned 2A, 2C, and 3C. The most relevant indicator to historic sites, structures, and landscapes in El Portal is extent of and diversity of cover of riparian vegetation within the river corridor. The effects of management actions would vary by the action taken. Educational measures are expected to result in local, short-and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures, such as limits on activities near the river or reduced activity levels, would benefit these resources by reducing opportunities for visitor- or employee-related damage such as vandalism, erosion, and wear and tear. These measures could result in short-term or long-term, moderate, beneficial impacts to historic sites, structures, and landscapes. Site-hardening activities, such as construction of picnic facilities or roadway improvements, could result in adverse effects on historic landscapes if the new design is incompatible with the character of the landscape. However, the potential actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and design guidelines. The Merced River Plan's criteria and considerations would also apply. Therefore the adverse effects of new development would likely be local, long term, and negligible to minor. Conversely, if the design is compatible with the historic landscape character, and if the new facilities reduce the likelihood of visitor- or employee-related damage to historic sites, structures, and landscapes, then site hardening activities could have a local, long-term, moderate, beneficial effect on these resources.

Overall, local, long-term, minor, adverse impacts and local, short- and long-term, moderate, beneficial impacts on historic sites, structures, and landscapes could occur, depending on future actions that could be implemented under this alternative. Adverse effects would be reduced in intensity under Alternative 2 by the application of more stringent zoning within the larger, revised river corridor boundary (as compared to Alternative 1), which would require the application of a consistent set of criteria and considerations (as described under the Alternative 1 analysis) to a larger area. The implementation of a VERP program could have long-term moderate, beneficial impacts to historic sites, structures, and landscapes and local, long-term, negligible to minor, adverse impacts depending on the management action taken.

Impacts in Wawona. Historic sites, structures, and landscapes in Wawona include the Washburn cultural landscape, the Chowchilla Mountain Road, Civilian Conservation Corps structures, the Wawona Covered Bridge, the Wawona Hotel (a National Historic Landmark), and the Pioneer Yosemite History Center. Many relocated, individually listed National Register historic structures comprise the Pioneer Yosemite History Center.

The Wawona segment is primarily zoned for low-intensity visitor use, with very limited areas for higher intensity uses (e.g., the golf course, Pioneer Yosemite History Center). Therefore, management actions taken to address VERP monitoring are likely to focus on more restrictive measures, as opposed to measures such as site hardening. The indicators that are most relevant to historic sites, structures, and landscapes in Wawona include (1) length of social trails in meadows and (2) extent of and diversity of cover of riparian vegetation within the river corridor. Educational measures designed to change visitor behaviors in ways that reduce vegetation trampling, riverbank erosion, and social trails, are expected to improve the natural and cultural setting and therefore would result in local, short- and long-term, negligible to minor, beneficial effects on historic sites, structures, and landscapes. More restrictive measures, such as limits on activities near the river or reduced activity levels, would benefit these resources by reducing opportunities for visitor-related damage such as vandalism, erosion, and wear and tear. These measures could result in short-term or long-term, minor to moderate, beneficial impacts to historic sites, structures, and landscapes. Site-hardening activities, such as construction of boardwalks, picnic facilities, or roadway improvements, could result in adverse effects on historic landscapes, but any new design would be compatible with the historic landscape character. If the new facilities reduce the likelihood of visitor-related damage to historic sites, structures, and landscapes, then site-hardening activities could have a local, long-term, minor to moderate, beneficial effect on these resources.

In the area below Wawona, which is zoned for Undeveloped Open Space (2A+), VERP management to address the number of people and social trails would likely be focused on education and more restrictive measures to reduce visitor levels and restore the natural resources. Site hardening would not be appropriate in this area. Education efforts to limit the number of visitors and reduce impacts to resources are expected to have long-term, negligible to minor, beneficial effects on historic sites, structures, and landscapes. More restrictive measures, such as enforced limits on the number of people accessing the area, would benefit the cultural ORV by decreasing the likelihood of visitor-related damage such as vandalism, erosion, and wear and tear.

Interim limits in the Wawona segment would allow for an increase in employee housing in the areas zoned Park Operations and Administration (3C). No new parking, overnight visitor accommodations, or camping would be added. New employee housing could adversely impact historic sites, structures, and landscapes resources. However, the potential actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and design guidelines. Therefore the adverse effects of new development in Wawona would likely be local, long term, and negligible to minor. Conversely, if the design is compatible with the historic landscape character and if the new facilities reduce the likelihood of visitor or employee-related damage to historic sites, structures, and landscapes, then site-hardening activities could have a local, long-term, moderate, beneficial effect on these resources.

Summary of Alternative 2 Impacts. Compliance with existing park policies including the 1999 Programmatic Agreement, Yosemite National Park Design Guidelines, and federal regulations such as the National Historic Preservation Act would help ensure that the cultural ORVs in each river segment are being protected and enhanced.

VERP would provide a suite of data to help monitor and preserve historic sites, structures, and landscapes. Implementation of management actions to address information from VERP monitoring is expected to improve natural and cultural conditions within the corridor. The improvements to the natural setting and reduced crowding and congestion would likely provide benefits to historic sites, structures, and landscapes within the corridor due to a decrease in visitor-related impacts such as vandalism, erosion, and wear and tear. If restrictive management actions are required to achieve these conditions, there would be moderate benefits to these resources related to a reduction of visitor-related damage. Implementation of the larger river corridor boundary and management zones in El Portal under Alternative 2 would result in less potential for development and would have a minor, beneficial effect on historic sites, structures, and landscapes or a minor to moderate, beneficial impact if development is designed to protect these resources.

Under Alternative 2, overall visitor numbers in the future would likely be lower than under Alternative 1. The implementation of the VERP program, based on the management zoning and other elements developed in the Merced River Plan, would result in long-term, minor to moderate, beneficial impacts on historic sites, structures, and landscapes and potentially long-term, minor, adverse effects on these resources related to increased development in some areas.

Cumulative Impacts

A detailed discussion of impacts from past, present, and future projects is provided under Alternative 1. Overall, these cumulative actions in combination with Alternative 2 could have a net long-term, moderate, adverse impact on historic sites, structures, and landscapes within the Merced River corridor

Impairment

Because Alternative 2 is expected to have minor, adverse effects on historic sites, structures, and landscapes, this alternative is not expected to impair the park's historic resources for future generations.

National Historic Preservation Act Section 106 Summary

Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in "no effect" to historic properties listed in or eligible for listing in the National Register of Historic Places, because the plan does not prescribe specific action. Any future actions allowed under the proposed alternative would undergo environmental review to determine potential effects on historic properties.

Visitor Experience

Analysis

The following discussion provides an overview of the types of impacts to recreation, interpretation and orientation, visitor services, and wilderness experience that could occur within each segment of the Merced River corridor under Alternative 2. Effects on visitor experience from the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have an adverse effect on the visitor experience. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to the visitor experience associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to the visitor experience are expected to be minor to moderate, and adverse.

Recreation

Analysis

The following discussion provides an overview of the types of impacts to recreational resources that could occur within each segment of the Merced River corridor from implementation of the existing user capacity management program along with interim facility limits, bus limits, and implementation of the VERP program. Effects on recreation from the proposed corridor boundaries and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Recreation ORVs in the Wilderness segment include outstanding opportunities for solitude along the river, primitive and unconfined recreation, and recreational opportunities such as day hiking, backpacking, horseback riding and packing, camping, and the enjoyment of natural river sounds.

Under Alternative 2, park management would implement interim facility limits which would limit construction of any new facilities (trails or campgrounds) in the wilderness. Since wilderness areas are managed for minimal facilities, this would not be expected to result in any impacts on recreation in this area. In addition, park management would implement the VERP program outlined in Chapter II, along with existing user capacity policies, such as the use of a wilderness trailhead quota system. Implementation of the VERP program would result in additional monitoring of indicators in wilderness areas, in addition to existing WIMS monitoring. (The impacts of the Wilderness Trailhead Quota System and WIMS, as described for Alternative 1, apply to this alternative as well).

Implementation of VERP would include adoption of the indicators and standards in table II-5. Indicators have been selected to provide overall information on the health of resources within the area. The number of encounters with other people and numbers of people recreating within the River Protection Overlay relate directly to the opportunities for solitude in wilderness areas and the ability to maintain the primitive character of the wilderness experience. Compliance with these standards would ensure protection of the recreation ORVs. If the standards for encounters and numbers of visitors within the River Protection Overlay are not met, management actions would be required to bring these visitor experience conditions back within the established standard in order to protect and enhance the recreation ORVs.

Management actions taken to address the VERP standards could range from educating visitors about less used areas, to more restrictive measures such as reducing certain trailhead quotas, reducing accommodations at Sierra High Camps, or requiring and enforcing specific wilderness itineraries. Additional management actions that could be taken in the heavily used 1C zone would include restricting day use, such as requiring permits for day hikers, limiting day use access to guided groups, or reducing infrastructure (such as the cables at Half Dome).

The impacts of the management actions would vary depending on the action, although all of the actions would be designed to address the number of other visitors encountered and to improve opportunities for solitude. Management actions such as visitor education would be expected to reduce impacts by encouraging more dispersion of visitors within wilderness areas. Educational efforts would be expected to result in local, short- and long-term, negligible to minor, beneficial impacts on the recreational experience and the recreation ORVs, in terms of the opportunities for solitude. More restrictive measures, such as reducing trailhead quotas, restricting stock use, limiting day-use access in heavily used areas to users with permits or guided groups, and other restrictive measures would be expected to have local, long-term, minor to moderate, beneficial effects on the quality of recreation and the recreation ORVs in these areas in terms of opportunities for solitude. These more restrictive measures could, however, result in local, long-term, moderate to major, adverse effects to visitors unable to access recreation in these areas.

Due to the seasonal nature of visitation to the Wilderness segments of the river corridor, coupled with the existing trailhead quota system that is already in place, implementation of the VERP program in wilderness areas would be expected to have a local, long-term, minor to moderate, beneficial impact on the recreation experience and the recreation ORVs in terms of opportunities for solitude, and a local, long-term, moderate to major, adverse effect on those visitors unable to access recreational opportunities due to trailhead quota reductions or restrictions on day visitors in wilderness areas. Although the potential for decreased access would reduce recreational opportunities for some visitors, overall the protection of the wilderness resources and the solitude of the wilderness experience would be expected to result in protection and enhancement of the recreation ORVs.

Impacts in Yosemite Valley. The recreation ORVs in Yosemite Valley include opportunities to experience a spectrum of river-related recreational activities, from nature study and sightseeing to hiking. Under Alternative 2, park management would implement the VERP program, and would adopt interim facility capacity limits until VERP provides sufficient information to guide user capacity management.

Since the interim facility limits would be set at close to existing levels, but with an increase in camping and bus numbers, there would be an increase in recreation access and opportunities. The effect on recreation would be local, short-term, minor, and beneficial in regards to recreation access and opportunities. Access to the spectrum of recreational opportunities would be maintained under these interim facility limits.

Under the VERP program, monitoring of indicators would provide information to management regarding the conditions of resources and recreation ORVs. Management actions would be taken when required to ensure that all established standards were met and the ORVs protected. In particular, indicators related to the number of people recreating in the River Protection Overlay and the traffic indicator would provide information regarding the quality of visitor experience in Yosemite Valley. Management actions taken under VERP could range from increasing visitor education, to restricting access to sensitive areas, restricting or limiting activities (swimming, picnicking, etc.) in specific areas, to constructing boardwalks to allow access to sensitive areas while protecting the natural resources. Management actions may also include closing and restoring areas adversely affected by visitor use. Management actions may differ depending upon which zone is affected. In Discovery (2A) zones, management actions are more likely to be restrictive of levels and types of visitor use, as these areas typically are more sensitive to visitor impacts and are managed for lower visitor concentrations. Management actions taken to address standards in more developed zones (2C through 3B) may focus more on education and site hardening, as these areas have been identified as being appropriate for higher levels of visitor use.

The effects of management actions to address VERP standards would vary by the action. All actions would be designed to address the adverse conditions noted, while protecting the recreation ORVs by maintaining visitor access to a spectrum of river-related recreational activities in Yosemite Valley. Educational measures designed to change visitor behaviors in ways that reduce vegetation trampling, riverbank erosion, and water pollution would be expected to result in improvements to the natural setting, without adverse effects on visitor freedom. Educational measures related to traffic congestion would be aimed at encouraging mass transit or other means of reducing traffic congestion, which, based on recent visitor surveys (Gramann 1992, ORCA 2000, Manning et al. 1999a,b), is one of the most negative factors affecting visitor experience. Educational measures would be expected to result in local, short- and long-term, negligible to minor, beneficial effects on recreation. More restrictive measures, such as limits on activities near the river, reduced activity levels, or restrictions on car and/or bus access to Yosemite Valley, would benefit the natural setting and reduce traffic congestion, but would also result in some loss of visitor freedom and opportunities. These restrictions would be designed to maintain the spectrum of recreational opportunities encompassed by the recreation ORVs, although the use levels for some activities may be reduced. The intensity of the effects of these restrictions on recreation would depend upon their extent and duration. The beneficial effects of reduced traffic and congestion on visitor experience would be minor to major, depending upon the level of improvement in traffic congestion on busy days. Restrictions on car and bus access would also result in moderate to major, adverse effects on those visitors unable to access the Valley in their preferred manner (private vehicles) or at their preferred time. Therefore, the effect of restrictions on recreation would range from local, short- or long-term, minor, beneficial and adverse effects on recreation for short-term restrictions, to moderate to major, beneficial and adverse effects for long-term widespread restrictions. Site-hardening activities, such as the construction of boardwalks, picnic facilities, or roadway improvements, could result in some adverse effects on the natural environment, but would be limited to areas designated for higher levels of development and use and therefore would be expected to result in local, long-term, minor, beneficial effects to recreation in these areas.

Overall, Alternative 2 would be expected to have both beneficial and adverse effects on the visitor experience. Where education, site hardening, and other nonrestrictive management actions are used to address the standards under VERP, the effect on recreation is expected to be long-term, minor to major, and beneficial. Management actions that result in long-term, broad-based restrictions on visitor transportation options, types of activities, and levels of use could also have long-term, minor to major, adverse impacts on visitors unable to gain access on any particular day. All management actions would be designed to address any adverse conditions identified through the VERP process while protecting all of the ORVs, including the spectrum of recreational opportunities encompassed in the recreation ORVs. Therefore, implementation of Alternative 2 would be expected to maintain visitor access to a broad spectrum of recreational opportunities in Yosemite Valley and protect the recreation ORVs.

Impacts in the Gorge. The recreation ORVs for the Gorge segment are related to the opportunities for a spectrum of recreation opportunities.

The interim facility limits in the gorge would be set at existing levels. Since use levels in the gorge are below the existing facility capacity, potential growth in visitor use is not expected to affect access to recreational opportunities in this area. Therefore, the limits would not be expected to have any effect on access to recreational opportunities in the gorge compared to Alternative 1.

Under the VERP program, management actions would be taken when required to ensure that all established standards were met and the ORVs protected. Management actions in the gorge could range from increasing visitor education, restricting access to sensitive areas, restricting or limiting activities within the river corridor, or closing areas for restoration.

The effects of these management actions within the gorge would vary by the action taken. Educational measures would be expected to result in local, short- and long-term, negligible to minor, beneficial effects. Over time, if use levels increased, more restrictive measures, such as limits on vehicle access and parking, limits on activities near the river, or overall reduced visitor levels, would be expected to reduce visitor opportunities and freedom, while providing for a less crowded and more natural experience for those who are recreating there. These restrictions would be designed to maintain the spectrum of recreational opportunities encompassed by the recreation ORVs, even though the use levels for certain activities may be reduced. The intensity of the beneficial effects would depend upon the level and duration of restrictions. The adverse effects of the restrictions would also depend on their duration, as well as on whether the restrictions were selective in terms of areas and activities, or were more broad-based, such as an overall reduction in visitors allowed through the park entrance stations. Short-term, selective restrictions would be expected to result in local, short-term negligible to minor, adverse effects on recreational access and visitor freedom. Longer-term and more broad-based restrictions could result in long-term, moderate, adverse effects on certain visitors due to reduced access and visitor freedom. Site hardening, such as the construction of parking or picnic facilities, would have local, long-term, minor, beneficial effects on recreation by providing for appropriate levels of visitor facilities within those areas designated for higher levels of visitor use while protecting other park resources.

Overall, Alternative 2 would be expected to have local, long-term, negligible to minor, beneficial impacts on visitor experience related to reduced traffic and crowding and reduced impacts to the natural environment. Management actions that achieve these goals through education and site hardening would have local, long-term, minor, beneficial effects on recreation. Management actions that are more restrictive could have local, short- or long-term, minor to moderate, adverse effects on recreation and visitor experience through decreased access, a decrease in the level of use for some activities, and reduced visitor freedom. All management actions would be designed to address any adverse conditions identified through the VERP process while protecting all of the ORVs, including the spectrum of recreational opportunities encompassed by the recreation

ORVs. Therefore, implementation of Alternative 2 would be expected to maintain visitor access to diverse recreation opportunities and protect the recreation ORVs.

Impacts in El Portal. Under Alternative 2, the boundary for the El Portal segment of the river would be based upon a quarter-mile boundary on both sides of the river. The zoning for the El Portal corridor under Alternative 2 calls for primarily park administrative uses (3C) north of the river with some day use (2C) zoning, and primarily day use (2C) and open space (2A) on the south side of the river with administrative use (3C) zoning in existing developed areas. This boundary is wider than the boundary under Alternative 1 and could result in less development in areas that are currently outside the boundary but that would be included within this wider boundary. The areas within the corridor that would be zoned 3C would have the potential to be developed as administrative facilities, but only if these facilities can meet the criteria for construction within the river corridor (protection of the ORVs and compliance with the other elements of the Merced River Plan). Development of additional administrative facilities would not be expected to adversely affect access to or opportunities for recreational activities, since these areas are not currently used for access to recreation. Since there are no existing visitor facilities on National Park Service lands in the El Portal Administrative Site, visitor use is limited within the corridor, and recreational activities within this area are focused on the river itself, the proposed boundary and zoning are expected to have a long-term, local, negligible, beneficial effect on access to recreation, the quality of the visitor experience, and the recreation ORVs within this segment.

Since the interim facility limits on day-visitor parking in El Portal would be set at existing levels, and access to recreation in El Portal is currently below the parking capacity, the interim limits are not expected to result in any effect on recreation access in El Portal.

Alternative 2 would result in the implementation of the VERP program within the El Portal segment. Management actions taken could range from implementing educational measures or reducing facilities such as parking, to restricting certain activities or closing specific areas.

The effects of management actions would vary by the action taken as described above. Educational measures would be expected to result in local, long-term, negligible, beneficial effects on recreation through improvements to the natural setting. More restrictive measures would be expected to adversely affect recreational opportunities, but the duration and the intensity would depend upon whether the restrictions are short- or long-term, and whether they are selective or broad-based. The restrictions would be designed to maintain the spectrum of recreational opportunities encompassed by the recreation ORVs, although use levels of some activities could be reduced. Due to the small number of visitors using this segment, restrictive measures are unlikely in the short term. If use levels increased, the restrictive measures would be expected to result in long-term, negligible to minor, adverse effects on recreation and visitor experience. Site hardening, such as the construction of parking or picnic facilities, could increase opportunities for visitor use of the area and could have local, long-term, minor, beneficial effects on access to recreation in this area.

Overall, Alternative 2 would be expected to have local, long-term, minor, beneficial effects or local, short- or long-term, minor, adverse effects on recreation and visitor experience, depending on the management action. Because all management actions would be designed to address any adverse conditions identified through the VERP process while protecting all of the ORVs, including recreation, implementation of Alternative 2 would be expected to protect the recreation ORVs.

Impacts in Wawona. The recreation ORVs for Wawona relate to the spectrum of river-related recreational activities available, from nature study to photography to hiking. Below Wawona, the recreation ORVs are related to outstanding opportunities for river-related solitude, enjoyment of natural river sounds, and primitive and unconfined recreation in an untrailed, undisturbed environment. River-related recreational opportunities within this area include hiking, fishing, and whitewater kayaking. There is no recreation ORV for the Wawona Impoundment segment.

Since the interim facility limits on visitor facilities and bus limits would be set at close to existing levels, the interim facility limits would not be expected to affect access to recreation opportunities in the short-term.

Under Alternative 2, park management would implement the VERP program to provide information on the condition of resources and the ORVs. The effects of management actions taken in Wawona would range from minor to moderate and could be both beneficial and adverse, as described above for Yosemite Valley. In the area below Wawona, restrictive measures such as enforced limits on the number of people accessing the area would benefit the ORVs by providing more opportunities for solitude and enjoyment of natural river sounds, but could also result in adverse effects to some visitors by limiting access.

Overall, Alternative 2 would be expected to have long-term, minor to moderate, beneficial effects on recreation if park management implements educational measures to reduce numbers of people and impacts to natural resources. More restrictive measures, such as enforcing limits on the number of people accessing the area, would result in minor to moderate, adverse effects on some visitors who would not gain access to recreational opportunities. The intensity would depend upon the level and duration of restrictions. All management actions taken would be designed to protect the recreation ORVs by maintaining visitor access to the spectrum of recreational opportunities encompassed by the recreation ORVs.

Summary of Alternative 2 Impacts. Under Alternative 2, park management would implement interim facility limits and bus limits to manage visitor use levels until the VERP program was fully implemented. Since these interim limits would be set close to existing levels, with some increase in camping and bus levels in the Valley, the impact of the interim facility limits would be local, short-term, negligible to minor, and beneficial. Management actions taken under VERP would be expected to improve natural and social conditions within the corridor. Improvements to the natural setting and reduced crowding and congestion would be expected to provide benefits to recreational and visitor experiences within the corridor. If restrictive management actions are required to achieve these natural and social conditions, however, there would also be adverse effects on the visitor experience related to decreased access to recreational opportunities. The duration and intensity of these adverse effects would depend upon the duration and extent of the restrictive measures. These measures would be designed to maintain the spectrum of recreational opportunities encompassed by the recreation ORVs, although the use level of some activities may decrease. Overall, the measures would be expected to benefit visitor experience and to protect access to the spectrum of recreational opportunities that make up the recreation ORVs. The El Portal boundary would similarly benefit visitor experience and protect recreation access by maintaining access points as day use areas.

Cumulative Impacts

The effects of past, present, and reasonably foreseeable future projects are summarized under Alternative 1. These cumulative projects would have a long-term, negligible to minor, beneficial impact on recreation, because the beneficial impacts associated with increased visitor access and expanded recreational opportunities would be partially offset by the adverse impacts associated with the removal of specific recreational opportunities.

Alternative 2 and the cumulative projects within and in the vicinity of Yosemite National Park would result in long-term effects on recreation and visitor experience in the corridor that are both beneficial and adverse. Improvements to the natural setting and reduced crowding and congestion would benefit recreational experiences. However, restrictions implemented to protect the ORVs and other park resources could adversely affect recreational opportunities through reducing visitor access to them. The intensity of effects would depend on the type of restrictions implemented. More restrictive measures are likely to result in greater benefits to quality of visitor experience (associated with natural setting and congestion), but also greater adverse effects on the visitor experience.

Interpretation and Orientation

Analysis

The following discussion provides an overview of the types of impacts to interpretation and orientation opportunities that could occur within each segment of the Merced River corridor under Alternative 2. Effects on interpretation and orientation opportunities from the proposed corridor boundaries and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Implementation of interim facilities limits is not expected to affect interpretation and orientation in the Wilderness. Under Alternative 2, implementation of VERP could result in management actions taken to reduce the level of use in some areas, if social standards (such as the number of parties encountered or the number of people recreating in the River Protection Overlay) or other standards are exceeded. If management actions were taken to reduce levels of use in the wilderness, interpretive programs in the wilderness (such as ranger talks at Little Yosemite Valley Backpackers Campground and ranger-led loop hikes) could be reduced from existing levels. This could result in a local, short- or long-term, negligible to minor, adverse effect on visitor experience from reduced access to interpretative programs in wilderness areas as compared to the opportunities under the No Action Alternative.

Impacts in Yosemite Valley. Under Alternative 2, interim facility limits would be in place until the VERP program is fully implemented. Since these limits would be set at close to existing levels, with some increases in camping and bus levels, they would likely have no effect on access to orientation and interpretation programs.

The effects associated with VERP would depend upon the management actions implemented. If park managers use education to change visitor behaviors, there could be a demand for additional orientation and interpretive programs designed to change visitor behaviors and reduce impacts. This could result in a local, long-term, minor, beneficial effect on orientation and interpretive programs. If more restrictive measures are implemented, particularly restrictions on visitor access to areas that are currently used for interpretive programs, there could be a local, long-term, minor, adverse effect on access to orientation and interpretative programs.

Overall, implementation of Alternative 2 is expected to result in local, long-term, negligible, beneficial impact on visitor experience related to changes in access to orientation and interpretive programs in Yosemite Valley as compared to Alternative 1.

Impacts in the Gorge. Implementation of Alternative 2 would have no effect on interpretation and orientation in the Gorge segment because no interpretive programs are currently offered in the gorge.

Impacts in El Portal. Management zones proposed for the El Portal segment include park administration (3C), day use (2C), and open space (2A). It is not anticipated that interpretive programs would be provided in El Portal in areas zoned 3C. Interpretive programs could be provided in 2C areas in El Portal in the future. This would result in a local, long-term, negligible to minor, benefit to orientation and interpretation opportunities.

The effects from VERP would depend on the management actions implemented. Effects on interpretive programs could be beneficial if park management increases education to reduce any noted impacts. Effects could be adverse if visitor levels are restricted. Overall, the effect on interpretive programs in El Portal would be expected to be local, long-term, negligible to minor, and beneficial or adverse

Impacts in Wawona. Under Alternative 2, interim facility limits and bus limits would be in place until the VERP program is fully implemented. Since these facility limits and limits would be set at existing levels, they would not affect access to orientation and interpretation programs in Wawona.

Implementation of management actions under VERP could increase or decrease access to orientation and interpretive programs depending on the types of measures implemented. Overall, implementation of Alternative 2 is expected to result in a local, long-term, negligible, beneficial effect on orientation and interpretive programs as compared to Alternative 1.

Summary of Alternative 2 Impacts. Implementation of interim facility limits and bus limits are not likely to have any short-term effects on access to interpretive and orientation programs in the corridor. Implementation of VERP under Alternative 2 could have local, long-term, minor, beneficial or adverse effects on the access to orientation and interpretive programs, depending upon the management actions taken under VERP. Overall, the impact to these programs is expected to be negligible.

Cumulative Impacts

The effects of past, present, and reasonably foreseeable future projects in the Yosemite region are described under Alternative 1. The cumulative projects would have a long-term, minor, beneficial impact, because the beneficial impacts associated with an increase in interpretation and orientation programs and services would only be partially offset by potential reductions of interpretive programs in the wilderness.

Alternative 2 together with the cumulative projects would result in a long-term, minor, beneficial impact because the availability and diversity of interpretation and orientation programs and services would increase through some of the cumulative projects. Alternative 2 could result in management actions that increase or reduce access to and availability of interpretation and orientation programs and services, but the overall effect is expected to be negligible.

Visitor Services

Analysis

The following discussion provides an overview of the types of impacts to visitor services that could occur within each segment of the Merced River corridor under Alternative 2. Effects on visitor services from the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Under Alternative 2, implementation of interim facility limits are not expected to affect visitor services in the wilderness compared to Alternative 1. Implementation of VERP could result in management actions to reduce the level of use in some areas, if standards are not being met. Use levels could be reduced through changes to wilderness trailhead quotas or changes to services available in wilderness areas, such as campgrounds. Since wilderness areas currently have low levels of visitor services, Alternative 2 could result in local, short- or long-term, negligible to minor, adverse effects on visitor experience through reduced services and opportunities in wilderness areas if VERP standards were not being met.

Impacts in Yosemite Valley. Under Alternative 2, interim facility limits and bus limits would be in place until the VERP program is fully implemented. Since these limits would allow for an increase in camping facilities compared to the No Action Alternative, there would a local, long-term, minor, beneficial effect on visitor services in Yosemite Valley related to the interim limits.

Alternative 2 would result in implementation of VERP in addition to the park's existing user capacity programs. Management actions taken to achieve the VERP standards could range from education, to restricting certain uses, to restricting use levels in specific areas or throughout the Valley. Impacts on visitor services would depend upon what types of management actions were implemented. Management actions that restrict visitor use levels within certain areas or Valleywide could result in reductions of visitor services, such as camping, lodging, and food services. However, management actions taken in areas zoned for intensive use could include additional visitor services, such as increased food service facilities or day use facilities. Regardless of the management actions taken, it is anticipated that park management, park partners, and the primary park concessioner would adjust visitor services provided to meet the level of visitor demand that would result from park management decisions on activity levels throughout the Valley. Therefore, the impacts of Alternative 2 on provision of and access to visitor services would be expected to be local, long-term, minor, and adverse, since visitors would still have access to visitor services, but there could be limitations or restrictions in certain areas.

Impacts in the Gorge. Under Alternative 2, interim facility limits would be set at existing levels and would not affect access to visitor services, which are very limited in the gorge. Management actions taken to address VERP indicators and standards could result in either reductions or expansions of the picnic and parking facilities within the gorge. It is expected that the level of these facilities would be adjusted to meet the level of visitor demand that would result from park management decisions for this zone. Therefore, there would be no effect on visitor services in the Gorge segment under Alternative 2.

Impacts in El Portal. The El Portal river corridor boundary and management zoning proposed under Alternative 2 includes areas zoned for administration, day use, and open space. This zoning would allow for limited visitor facilities. Since visitor use levels in this segment are low, and most visitor facilities are provided on private lands, the boundary and zoning would only be expected to result in local, long-term, negligible, benefits to visitor services compared to Alternative 1.

Implementation of VERP could result in management actions that increase or decrease visitor levels and visitor services in El Portal. Again, the effects could be beneficial or adverse but would likely be negligible compared to Alternative 1.

Impacts in Wawona. Under Alternative 2, interim facility limits and bus limits would be in place until the VERP program is fully implemented. Since these limits would be set at existing levels, they would not affect visitor services in Wawona compared to Alternative 1.

Alternative 2 would implement the VERP program in addition to the park's existing user capacity programs. Management actions taken to address the VERP standards and indicators could vary as described above. Management actions which restrict visitor use levels within certain areas could result in reductions of visitor services, such as camping and lodging. However, since the lodging and camping areas are located in areas zoned for intensive use, management actions taken in these areas could focus more on visitor education to change behaviors, site hardening, and other nonrestrictive actions. Regardless of the management actions taken, it is anticipated that park management, park partners, and the primary park concessioner would adjust the services provided to meet the level of visitor demand that would result from park management decisions on local activity levels. Therefore, the impacts of Alternative 2 on provision of and access to visitor services would be expected to be local, long- term, minor, and adverse, since visitors would still have access to visitor services, but there could be limitations or restrictions in certain areas.

Summary of Alternative 2 Impacts. Interim facility limits and bus limits are expected to have a short-term, minor, beneficial effect on visitor services in Yosemite Valley. These limits would not be expected to affect visitor services in other segments. Actions taken under VERP would be expected to result in local, long-term, negligible to minor, adverse impacts on access to and the availability of visitor services. Visitors would still have access to overnight camping and lodging opportunities, but there could be long- or short-term restrictions put on uses in some areas to address resource impacts.

Cumulative Impacts

Effects of past, present, and reasonably foreseeable future projects are described under Alternative 1. The cumulative projects would have a long-term, minor to moderate, adverse impact on visitor services due to the overall reduction of overnight accommodations in Yosemite Valley and potential additional restrictions on activities and facilities in the wilderness. These adverse impacts would be partially offset by improving parking and traffic circulation in Yosemite Valley, rehabilitating and expanding some campgrounds in the park, and expanding lodging opportunities outside the park.

Alternative 2 together with the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor to moderate, adverse impact on visitor services because of the potential reduction of overnight accommodations in Yosemite Valley and potential additional restrictions on activities and facilities in the wilderness. This adverse impact would be partially offset by improving parking and traffic circulation within the Valley, rehabilitating and expanding some campgrounds in the park, and expanding lodging opportunities outside the park.

Wilderness Experience

Analysis

The following discussion provides an overview of the types of impacts to the wilderness experience that could occur within the Merced River corridor under Alternative 2.

Under Alternative 2, park management would address user capacity through interim facility limits and VERP. The interim facility limits would not result in any effects on the wilderness experience as compared to Alternative 1. VERP management actions within wilderness areas would be designed to ensure that wilderness conditions are maintained at their desired condition. Management actions to achieve this goal could include restricting use of certain areas, limiting activity levels through reduced trailhead quotas, reducing use of backpacker campgrounds, and implementing day use restrictions in heavily used areas like Little Yosemite Valley. These actions would only be taken if conditions were not meeting adopted VERP standards.

Overall, access to the wilderness within the Merced River corridor would continue to be managed under the current wilderness permit system, and primitive camping and opportunities for solitude would remain available. Management actions to reduce use levels, as described above, would have local, long-term, minor to moderate, beneficial effects on wilderness experiences in terms of the natural conditions and solitude, but could also have local, long-term, moderate to major, adverse effects on those visitors unable to gain access. Past park experience with management of wilderness areas suggests that the benefits of limited access in wilderness areas outweigh the adverse effects on recreational access, resulting in a net beneficial impact on wilderness experience when appropriate restrictions are imposed. Therefore, implementation of VERP under Alternative 2 would be expected to be local, long-term, negligible, and beneficial.

Summary of Alternative 2 Impacts. Alternative 2 would likely result in a local, long-term, negligible, beneficial impact on the wilderness experience related to implementation of management actions designed to ensure that wilderness conditions meet desired conditions.

Cumulative Impacts

Effects of past, present, and reasonably foreseeable future projects are described under Alternative 1. These cumulative projects would have a long-term, minor, beneficial impact on the wilderness experience, because the wilderness ecosystem would be improved and this effect would only be partially offset by the long-term, adverse impact of potential additional restrictions on activities and facilities in the wilderness.

Alternative 2 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a local, long-term, negligible to minor, beneficial impact to the wilderness experience, because the beneficial improvements to the wilderness ecosystem would offset the potential additional restrictions on activities and facilities in the wilderness and the potential for decreased recreational access associated with management actions under VERP.

Social Resources

Land Use

Analysis

The following discussion provides an overview of the types of impacts to land use that could occur within each segment of the Merced River corridor under Alternative 2. The analysis for the

El Portal segment also describes the types of impacts to land use that could occur based on the adoption of the river corridor proposed under Alternative 2.

As described under Alternative 1, management zoning establishes future desired resource conditions, visitor activities and use levels, and appropriate facilities. Alternative 2 would implement the existing user capacity management program with interim limits and the VERP program. The indicators and standards under VERP are specifically designed to provide information to park management on whether the desired conditions in various management zones are met. Therefore, implementation of VERP is inherently consistent with existing management zoning and would have a beneficial effect on land use within the river corridor. Alternative 2 would not be expected to result in any changes in land use within the park. Development in El Portal is discussed below.

Impacts to Wilderness. Implementation of Alternative 2, including the VERP program, would be consistent with the management zoning developed in the Merced River Plan and with the existing land uses in the Wilderness segments of the river corridor.

Impacts to Yosemite Valley. Implementation of Alternative 2, including the VERP program, would be consistent with the management zoning developed in the Merced River Plan and with the existing land uses in the Yosemite Valley segment.

Impacts to the Gorge. Implementation of Alternative 2, including the VERP program, would be consistent with existing management zoning and existing land uses in the Gorge segment.

Impacts in El Portal. Under Alternative 2, the park would adopt a river corridor boundary based upon a quarter-mile boundary north and south of the river in El Portal. This alternative would result in 192 acres of Day Use (2C), 411 acres of Park Operations and Administration (3C), and 250 acres of Open Space (2A), for a total of 853 acres within the corridor. Since facilities developed within the river corridor must meet stringent standards, this alternative could result in less overall development of residential and administrative facilities in the El Portal area, reducing the potential for adverse effects on land use as compared to Alternative 1. Overall, any potential development would be consistent with existing development in the area and with the adopted management zoning prescriptions.

Implementation of Alternative 2, the existing user capacity program with the addition of interim facility limits and VERP, would be consistent with existing management zoning and existing land uses.

Impacts to Wawona. Implementation of Alternative 2 would be consistent with existing management zoning and existing land use in Wawona.

Summary of Alternative 2 Impacts. Under Alternative 2, the park would implement a VERP program in addition to the user capacity measures currently in use. Since VERP is based on achieving the goals defined in the park's management zones, implementation of Alternative 2 would be consistent with park management zoning within the river corridor. In El Portal, the proposed river corridor boundary and management zoning could result in a local, long-term, minor, beneficial effect on land use compared to Alternative 1.

Cumulative Impacts

The effects of past, present, and reasonably foreseeable projects were described under Alternative 1. Overall, the cumulative projects would be expected to have local, long-term, minor to moderate, adverse effects on land use due to the potential for additional development of residential and administrative uses and a decrease in open space in the El Portal and Wawona areas. The impacts should be offset somewhat by the planning efforts underway on countywide planning and the El Portal Concept Plan.

The effects of Alternative 2 and the cumulative projects would result in local, long-term, minor, adverse cumulative effects on land use within the river corridor.

Transportation

Analysis

The following discussion provides an overview of the types of transportation impacts associated with Alternative 2. Because transportation services and facilities are not provided in wilderness areas, this analysis does not address impacts in the Yosemite Wilderness segments of the river corridor.

This alternative sets interim facility limits and bus limits to manage visitor use within the Merced River corridor. These limits approximately reflect existing conditions, with the exception of some increase in campsites in Yosemite Valley and a bus limit which would allow for an increase in buses from current levels to a maximum of 92 per day. Since the interim facility limits are set at close to existing levels, the effect on transportation would be minimal.

Implementation of the interim facility limits and bus limits would result in some increased traffic compared to existing levels due to increased camping and bus traffic levels. The park would potentially need to implement restricted access policies on a more frequent basis to enforce the interim facility limits. If visitation grows in the future, the VERP program which includes indicators and standards related to traffic, could result in management actions designed to bring traffic levels to acceptable standards.

Long-term transportation impacts would depend on the management actions implemented under the VERP process. In particular, the VERP program will include monitoring of parking demand and capacity, which correlates with traffic congestion. If the VERP monitoring process determined that indicators and standards related to traffic were being violated, the park would implement management actions to return traffic conditions to acceptable levels consistent with VERP indicators. Depending on the actions, visitation patterns and the associated traffic volumes and transportation conditions could change. If management actions led to lower levels of visitation, or parking and transportation improvements, transportation conditions could be improved.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have an adverse effect on transportation. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to transportation associated with redirection of visitors would be short-term, and variable in location and could occur in areas within or adjacent to the park. Therefore, potential impacts to transportation are expected to be minor to moderate, and adverse.

Impacts in Yosemite Valley. Implementation of the interim facility limits and bus limits for Yosemite Valley under Alternative 2 would require park management to ensure that day-visitor parking does not exceed the existing day-visitor parking capacity in the Yosemite Valley. Based on current use levels, day visitor access would need to be limited on about five weekend days in the summer. As discussed in the Transportation section of Chapter IV, the numbers of vehicles (both autos and buses) entering Yosemite Valley have distinct seasonal patterns. During the peak months of June through August vehicle traffic is much greater than in the remaining months of the year, particularly in the winter months between November through February. Bus traffic would also be expected to increase compared to current levels but would not exceed past peak levels of 92 buses per day.

The existing traffic bottlenecks, where high volumes of pedestrians cross major roadways, would continue to experience congestion during peak travel periods. During the peak visitation season, park staff would continue to direct visitors to available parking and manage vehicle and pedestrian traffic at several congested intersections. Park staff members would direct visitors to roadside parking areas when parking lots are full, but would limit the roadside parking to designated areas. During peak times, visitors would still experience delays in accessing recreation sites due to the time spent searching for parking, and congestion would continue to affect visitors and other travelers exiting the Valley via Northside Drive. The congestion would be negligibly greater than in Alternative 1, due to the small increases in traffic associated with this alternative. The congestion from private vehicle traffic would continue to delay the operation of the Yosemite Valley Shuttle system, reducing its effective capacity and causing overcrowding of the buses during peak times. Park management would likely need to implement restricted access to the Valley more frequently than under Alternative 1 to ensure that actual use is managed to existing parking facilities.

Under Alternative 2, for the long term there would be local, negligible to minor, adverse impacts on the transportation system in Yosemite Valley compared to Alternative 1 due to the increase in traffic associated with the added campsites. However, traffic congestion will be monitored as part of the VERP process through measurable indicators and standards. If indicators and standards were not being met, park management would implement management measures that would change visitation patterns and/or transportation conditions in the Valley. The impact of these changes would depend on the specific measures implemented. For example, management actions that lower visitor levels during peak periods would result in local, short- to long-term, minor to moderate, beneficial effects on transportation, depending on the duration and intensity of the restrictions. In addition, management actions that improve transportation or parking facilities would also result in local, long-term, minor to moderate benefits, depending on the specific improvements.

Overall, Alternative 2 would likely have local, short-term, negligible to minor, adverse effects on traffic, but local, long-term, minor to moderate, benefits on traffic resulting from implementation of VERP measures to address parking and traffic congestion in the Valley during peak periods.

Impacts in the Gorge. Under Alternative 2, the interim facility limits would be set based on the existing designated parking supply in the Gorge segment. When restricted access policies are implemented for Yosemite Valley, the parking spaces in the Gorge are likely to be occupied more often as use is displaced away from the Valley. This would occur more frequently under Alternative 2, as a result of the interim facility limits in Yosemite Valley. The existing parking supply in the Gorge would limit the degree to which displaced users from the Valley could be accommodated. If park visitation increases, parking areas in the Gorge could be filled more regularly, resulting in a short-term, local, negligible, adverse effect on transportation in the Gorge.

The effects of VERP would depend on the management actions taken to address conditions that do not meet standards. Implementation of management actions designed to address the parking capacity standard under VERP would be likely to result in local, short- or long-term benefits to transportation in the Gorge segment. The intensity of the effect would depend on the measures implemented.

Under Alternative 2, for the short term there would be local, negligible, adverse impacts on the transportation system of the Gorge segment. In the long-term, there could be local, beneficial effects on transportation related to implementation of VERP. The intensity of these effects would depend on the specific measures implemented.

Impacts in El Portal. The proposed river corridor boundary and management zoning in El Portal under Alternative 2 include areas zoned for Park Operations and Administration (3C) and Day Use (2C) and Open Space (2A). Development of employee housing and day-use parking would be allowed in these areas, but would only be developed within the corridor if all conditions of the Merced River Plan and other Wild and Scenic Rivers Act requirements were fulfilled. The development potential would be less than under Alternative 1. Therefore, the boundary and zoning proposed under Alternative 2 would be expected to have a local, long-term, negligible, beneficial effect on transportation in El Portal.

Under the proposed interim facility limits, parking in El Portal would be limited to existing parking spaces within this segment. Since the interim limits are set at current levels, they are not expected to affect transportation resources in El Portal in the short term.

Under Alternative 2, the implementation of VERP would be expected to result in management actions to address conditions that do not meet transportation or other adopted standards. These measures could include restrictions on use levels or activities, reductions in available parking, or increases in available parking. The effects on transportation resources would depend on the measures taken, but would overall be expected to be local, long term, negligible to minor, and beneficial.

Overall, Alternative 2 would be expected to result in local, short- and long-term, negligible to minor, beneficial impacts on the transportation system in El Portal.

Impacts in Wawona. Under Alternative 2, interim facility limits and bus limits would be implemented in Wawona. The interim limits and bus limits are set at close to existing levels, and park management would be required to manage use levels to these facility capacities. Displaced parking from the visitor parking lot at the Mariposa Grove would continue to affect transportation conditions in Wawona. Vehicle parking along the road shoulders of Highway 41 and Forest Drive would be limited to existing parking capacity under Alternative 2. Additional visitors who want to use facilities at Wawona, including the store and the Pioneer Yosemite History Center, may be displaced by the limits on overflow parking. Temporary access restrictions could be required during peak periods, resulting in local, short-term, negligible to minor, adverse effects on transportation in Wawona.

Under VERP, park management could implement management measures that would change visitation patterns and transportation conditions in Wawona. The impact of these changes would depend on the specific measures implemented. For example, management actions that lower visitor levels during peak periods would result in local, short- to long-term, minor to moderate, beneficial effects on transportation, depending on the duration and intensity of the restrictions. In addition, management actions that improve transportation or parking facilities would also result in local, long-term, minor to moderate benefits, depending on the specific improvements.

Under Alternative 2, in the short term there would be local, negligible to minor, adverse impacts on the transportation system of the Wawona area on those peak days when traffic levels are high during the summer months. Visitor traffic in this segment is much less during non-peak times of the year. Implementation of access restriction measures would mitigate this condition. In the long term, there could be local, minor to moderate, beneficial effects related to access and traffic congestion during peak periods, depending on the management actions implemented under VERP.

Summary of Alternative 2 Impacts. Implementation of interim facility limits and bus limits would likely result in local, short-term, negligible to minor effects on transportation associated with some increase in bus traffic and private vehicle traffic associated with camping facilities. Managing of use to these interim facility limits could result in more frequent implementation of restricted access policies when parking capacity is exceeded. Implementation of VERP would be expected to result in local, long-term, minor to moderate, beneficial effects on transportation within the river corridor, but the intensity of impacts would depend on the specific actions implemented to address VERP transportation and other indicators.

Cumulative Impacts

As described under Alternative 1, the past, present, and reasonably foreseeable future projects would result in local, long-term, minor to moderate, beneficial effects on transportation. When combined with Alternative 2, the cumulative effect would be local, long-term, minor to moderate, and beneficial, as the long-term benefits associated with VERP would be expected to outweigh the short-term, adverse effects associated with increased traffic and congestion.

Scenic Resources

Analysis

The following discussion provides an overview of the types of impacts to scenic resources that could occur within each segment of the Merced River corridor under Alternative 2.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have a beneficial effect on scenic resources. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to scenic resources associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to scenic resources is expected to be negligible to minor, and beneficial.

Impacts in Wilderness. Scenic ORVs in the Wilderness segments of the river corridor include views from the Merced River and its banks of the exposed bedrock riverbed, Merced Lake and

Washburn Lake, the Bunnell Cascade, the confluence of tributaries, a large concentration of granite domes, and the Clark and Cathedral Ranges.

User capacity within the Wilderness segment would continue to be managed through the existing trailhead quota system and monitoring of wilderness resource conditions. Implementation of the VERP program would result in additional monitoring of indicators within the Wilderness segments.

Indicators have been selected to provide overall information on the health of resources within the Wilderness segments. Management actions associated with achieving standards would not affect the scenic ORVs or visitors' ability to view scenic ORVs in the Wilderness segments. Therefore, implementation of the VERP program overall is not expected to affect scenic resources and the scenic ORVs. Interim limits within wilderness areas of Yosemite do not call for new campgrounds or trails, and therefore would not affect the scenic ORVs.

Interim limits within wilderness areas of Yosemite do not call for new campgrounds or trails, and therefore would not affect the scenic ORVs.

Impacts in Yosemite Valley. Scenic ORVs within the Yosemite Valley segment include views from the Merced River and its banks of waterfalls and water features (Nevada, Vernal, Illilouette, Yosemite, Sentinel, Ribbon, and Bridalveil Falls and Silver Strand), rock cliffs (Half Dome, North Dome/Washington Column, Glacier Point, Yosemite Point/Lost Arrow Spire, Sentinel Rock, Three Brothers, Cathedral Rocks, and El Capitan), and meadows (Stoneman, Ahwahnee, Cook's, Sentinel, Leidig, El Capitan, and Bridalveil) and forests.

If monitoring of the VERP indicators showed that standards were not being met, management actions would be taken to address potential impacts. The effects of management actions would vary by the action. Educational measures designed to change visitor behavior in ways that reduce vegetation trampling, riverbank erosion, and water pollution would improve the natural setting. These measures would not adversely affect specific scenic features or visitors' ability to experience scenery, and therefore are expected to result in local, short- and long-term, negligible, beneficial effects on scenic resources. Educational measures aimed at encouraging mass transit or other means of reducing traffic congestion would likely have a local, long-term, negligible, beneficial impact. More restrictive measures, such as limits on activities near the Merced River, reducing activity levels, or restricting automobile or bus access to Yosemite Valley, would benefit the natural setting, reduce traffic congestion, and could result in long-term, negligible, beneficial impacts to visitors' ability to observe scenery. Site-hardening activities (such as construction of boardwalks, picnic facilities, or roadway improvements) could result in adverse effects on the natural environment but would be limited to areas designated for higher levels of development and use. New or improved site design would follow the Yosemite Valley design guidelines (NPS 2004c). Because these guidelines require consideration of significant views in all new design, site-hardening activities would likely result in local, long-term, negligible to minor, beneficial effects to scenic resources in these areas.

Nonattainment of VERP standards would result in management actions to address the potential impacts. The effects of these management actions would vary by the action. Educational measures designed to change visitor behavior in ways that reduce traffic are expected to result in local, short- and long-term, negligible, beneficial effects on scenic resources. More restrictive measures, such as limiting activities near the river, reducing activity levels, or increasing enforcement of regulations prohibiting wildlife exposure to human food, could result in long-term, negligible, beneficial impacts to visitors' ability to observe scenery. Site-hardening activities (such as the construction of roadway improvements or picnic facilities) in areas designated for higher-intensity uses could result in local, negligible to minor, beneficial effects on scenic resources.

Interim limits in Yosemite Valley would allow for an increase in camping in 3A zones. No new parking or overnight accommodations would be added. The increase in camping would have no effect on scenic resources or the scenic ORVs.

Overall, implementation of the VERP program with interim limits is expected to have a negligible benefit to scenic resources by reducing traffic congestion and crowding, conserving the natural environment, and providing better, less crowded, and less obstructed access to valued viewpoints. Where these goals are achieved through education, site hardening, and other nonrestrictive management actions, the effect on scenic resources is expected to be long term, negligible, and beneficial. Management actions that result in long-term, broad-based restrictions on visitor transportation options, types of activities, and levels of use could also have long-term, negligible to minor, beneficial impacts to scenic resources.

Impacts in the Gorge. Scenic ORVs for the Gorge segment of the river corridor include views from the Merced River and its banks of the Cascades, spectacular rapids among giant boulders, Wildcat Fall, Tamarack Creek Fall, the Rostrum, and Elephant Rock.

Most areas of the Gorge segment are zoned 2A+, 2A, 2B, and 2D. If VERP monitoring indicated that standards in these zones were not being met, management actions would be implemented to address the potential impacts.

The effects of these management actions within the Gorge segment would vary by the action. Educational measures are expected to result in local, short- and long-term, negligible, beneficial effects. More restrictive measures, such as limiting activities near the river, reducing activity levels, or restricting automobile or bus access to Yosemite Valley could result in short-term or long-term beneficial impacts to visitors' ability to observe scenery. The effect of the restrictions would depend on their duration, and on whether the restrictions were selective in terms of areas and activities or more broad-based, such as an overall reduction in the number of visitors allowed through the park entrance stations. Short-term, selective restrictions would likely result in local, short-term, negligible to minor, beneficial effects on visitors' ability to experience scenic resources. Site hardening, such as the construction of boardwalks, picnic facilities, or roadway improvements, could result in adverse effects on the natural environment, but would be limited to areas designated for higher levels of development and use (zones 2D and 3C). New or improved site design would follow the Yosemite Valley design guidelines (NPS 2004c). Because these guidelines require consideration of significant views in all new design, site-hardening activities would result in local, long-term, negligible, beneficial effects to scenic resources in these areas.

Interim limits in the Gorge segment would maintain day-visitor parking at existing levels; therefore, no new impacts are expected to scenic resources or the scenic ORVs.

Overall, the implementation of the VERP program with interim limits is expected to have local, long-term, negligible, beneficial impacts on scenic resources related to reduced traffic and crowding and reduced impacts to the natural environment. Management actions that achieve these goals through education and site hardening would have long-term, negligible, beneficial effects on scenic resources. Management actions that are more restrictive could also have local, short- or long-term, negligible, beneficial effects on scenic resources.

Impacts in El Portal. Scenic resources in the El Portal segment of the river corridor consist of views of the geologic transition between granite and metasedimentary bedrock along the canyon walls and distinct views of Chinquapin Fall.

The boundary for the El Portal segment of the river in Alternative 2 was based upon a quarter-mile boundary. The zoning proposed for the El Portal segment under Alternative 2 calls for Park Operations and Administration (3C) and Day Use (2C) north of the river. South of the river, existing developed areas are zoned 3C, undeveloped areas west of the levee are zoned 2C, and undeveloped areas east of the levee are zoned 2A (Undeveloped Open Space). Alternative 2 provides a total of 411 acres of Park Operations and Administration zoning (3C), 192 acres of Day Use zoning (2C), and 250 acres of Open Space zoning (2A).

The area zoned 3C could allow for the development of roads, interpretive facilities, administrative facilities and employee housing. The area zoned 2C could allow construction of new day use facilities such as bicycle trails, restrooms, picnic tables, and paved trails. The area zoned 2A could allow construction of unpaved trails and limited interpretive signs.

The proposed boundary and zoning designations for the El Portal segment is likely to result in additional development or redevelopment within the 3C zones, but the 2C and 2A zoning along much of the corridor would substantially limit new development in El Portal. Increased development north of the river could change the foreground views and decrease visibility of scenic resources. Zone 2C south of the river is intended to accommodate large groups, and visitors could expect moderate to high numbers of encounters with other users. Development of trails, restrooms, and picnic areas and an increase in visitor use could occur in zone 2C. The majority of the zoning south of the river is 2A, and would not result in any development or increase in visitor numbers that would affect scenic resources. Although additional development would likely result in a local, long-term, negligible, adverse effect on scenic resources within the El Portal segment, the development potential is lower under Alternative 2 than under Alternative 1. Therefore, Alternative 2 would result in a local, long-term, moderate, beneficial impact to scenic resources compared to Alternative 1.

Implementation of a VERP program within the El Portal segment would include monitoring of the indicators identified for zones 2A, 2C, and 3C. The effects of management actions would vary by the action. Educating visitors and employees to change their behavior related to activities that could adversely affect vegetation and water quality would likely result in local, long-term, negligible, beneficial effects on scenic resources. More restrictive measures (such as limits on activities near the river or reduced activity levels) would result in a negligible, beneficial effect on scenic resources. The duration and intensity of this effect would depend on whether the restrictions are short or long term and selective or broad-based. Conversely, these same measures could result in a local, long-term, negligible, adverse effect if they hinder visitors' ability to experience scenic resources. New or improved site design would follow the guidelines in the Yosemite Valley design guidelines (NPS 2004c). Therefore, site hardening (e.g., construction of parking or picnic facilities, increased employee housing, and increased development in the town center) could have local, negligible, long-term adverse effects on scenic resources in this area.

Interim limits in El Portal would allow for an increase in employee housing in the 3C zones. New site design would follow the design guidelines for Yosemite National Park and could therefore result in a local, negligible, long-term adverse effect on scenic resources in the El Portal segment.

Impacts in Wawona. The scenic ORVs for the Wawona segments of the river corridor include views from the Merced River and its banks of large pothole pools within slickrock cascades, old growth forest, meadows, Wawona Dome, and continual whitewater cascades in the deep and narrow river canyon below Wawona.

Implementation of VERP program throughout the Wawona segments would result in management actions to address conditions that do not meet the standards set for each zone. These management actions could range from less restrictive measures such as education and site hardening, to more restrictive actions related to reducing visitor activities or access in certain areas. The intensity of the measures taken would depend on the condition of the resources and the zoning of the area.

The Wawona segments would primarily be zoned for low-intensity visitor use, with very limited areas for higher-intensity uses (Wawona Golf Course, Pioneer Yosemite History Center). Therefore, management actions to address VERP monitoring would likely focus on more restrictive measures. Educational efforts in response to monitoring of natural resource and social conditions are expected to result in local, long-term, negligible benefits to scenic resources due to improvements to the natural environment. More restrictive measures, such as restrictions on activities or use levels in various areas, are also expected to result in negligible, beneficial effects on scenic resources.

In the area below Wawona, which is zoned for Undeveloped Open Space (zone 2A+), VERP management actions would likely focus on education and more restrictive measures to reduce visitor use levels and restore natural resources. Site hardening would not be appropriate in this area. Measures to reduce the number of visitors and impacts to natural resources are expected to have long-term, negligible, beneficial effects on scenic resources. More restrictive measures, such as enforcing limits on the number of visitors accessing the area, would benefit the scenic ORVs by creating an improved natural environment. These measures could also result in adverse effects by hindering visitors' ability to experience scenic resources. Since this area of the river corridor has limited accessibility and low visitor use levels, the overall effects of restrictive measures are expected to be local, long-term, and negligible.

Interim limits in Wawona would allow an increase in employee housing in the 3C zones. No new parking, overnight visitor accommodations, or camping would be added. New site design would follow the design guidelines for Yosemite National Park and could therefore result in local, long-term, negligible adverse effects on scenic resources and the scenic ORVs in the Wawona segments.

Summary of Alternative 2 Impacts. Compliance with existing park policies, including the Yosemite Valley design guidelines (NPS 2004c) would help ensure that the scenic ORVs in the Wilderness, Yosemite Valley, Gorge and Wawona are being protected and enhanced. VERP management actions would be expected to improve natural conditions within the corridor. Improvements to the natural setting and reduced crowding and congestion are expected to provide long-term, negligible, beneficial impacts on scenic resources within the corridor. Implementation of the wider river corridor boundary in El Portal would reduce development potential in this area compared to Alternative 1. Therefore, Alternative 2 would result in a local, long-term, moderate, beneficial impact to scenic resources compared to Alternative 1.

Cumulative Impacts

Cumulative impacts from past, present, and reasonably foreseeable future actions in conjunction with Alternative 2 would be the same as Alternative 1. Overall, these cumulative actions in combination with Alternative 2 could have a net long-term, minor, adverse impact on scenic resources and the scenic ORV within the Merced River corridor.

Impairment

Alternative 2 is expected to result in long-term, minor, beneficial impacts on scenic resources and therefore would not impair the scenic ORVs for future generations.

Socioeconomics

Social Environment

Analysis

Under Alternative 2, the park would supplement existing user capacity program elements with a VERP program. In addition, park management would institute interim facility limits and bus limits until it is determined the VERP program is providing sufficient guidance on user capacity management to ensure protection of the ORVs. Under this alternative, the river corridor boundary for the El Portal segment would closely follow the location of ORVs within a quarter-mile of the river within the El Portal Administrative Site.

Under this alternative, the interim facility limits would allow for some increase in employee housing within the river corridor to accommodate existing shortages. The social environment within the river corridor could be affected by changes in housing in the developed areas and by changes in commute times to park duty stations.

Impacts in Wilderness Areas. There are limited facilities in wilderness areas, and few employees are stationed in these areas. The interim facility limits would not affect the social environment for employees in wilderness areas. User capacity would continue to be managed under the existing trailhead quotas, with the addition of VERP monitoring to track resource and visitor experience conditions. If VERP monitoring indicates that established standards are not being met under the trailhead quota system, management could reduce trailhead quotas, close certain areas, or take other actions to reduce use of wilderness areas. However, management could also address impacts by increasing enforcement of wilderness regulations. Depending on the action taken, there is a potential for the number of visitors and employees to increase or decrease from current levels. Due to the small number of employees and facilities in wilderness areas, these potential increases or decreases would likely result in a local, long-term, negligible, adverse impact on the social environment in the Wilderness segments.

Impacts in Yosemite Valley. The implementation of interim facility limits, bus limits, and a VERP program in Yosemite Valley could result in management actions that might affect the social environment (e.g., housing, community amenities, employee commute, recreation opportunities). Although the interim facility limits would allow for some increase in employee housing within the corridor, the increase is unlikely to occur in Yosemite Valley because the *General Management Plan* calls for these types of uses to be moved out of the Valley. Implementation of VERP could result in a need to reduce employee housing in Yosemite Valley or to place restrictions on areas within the corridor used by residents for recreation (swimming, picnicking, etc.).

The effects of potential management actions in the Valley would vary by the action taken. Actions designed to reduce employee housing in the Valley could adversely benefit the social environment by reducing crowded housing conditions in the Valley. Commute times for Valley employees relocated outside the Valley would increase, however, resulting in a local, long-term, minor to moderate, adverse effect. Restrictions on the activities in various areas could reduce recreation opportunities for Valley employee residents. Because Valley employee residents have access to a broad range of recreation activities, these restrictions would likely result in a local, long-term, negligible to minor, adverse effect on recreation opportunities.

Overall, implementation of Alternative 2 could result in local, long-term, minor to moderate, benefit for employees who remain housed in the Valley and local, long-term, minor to moderate, adverse effects on employees relocated from Yosemite Valley.

Impacts in El Portal. The interim facility limits include a corridorwide limit on employee housing which allows for some additional housing within the corridor. Any expansion of employee housing in El Portal would need to be consistent with the proposed management zoning and the other elements of the Merced River Plan.

The river corridor boundary under Alternative 2 is based on a quarter-mile boundary on both sides of the river within the El Portal Administrative Site. The park administrative use (3C) zoning under Alternative 2 comprises much of the area north of the river and developed areas south of the river, allowing for development of additional administrative facilities consistent with the stringent guidelines of the Wild and Scenic Rivers Act. However, because more area is included within the corridor boundary, this alternative would likely allow for less development of new or expanded employee residential areas in El Portal compared to Alternative 1. In addition, more acreage under 2C (Day Use) and 2A (Open Space) zoning would restrict potential development in El Portal. Since the development potential under Alternative 2 is less than that under Alternative 1, the population effects on community amenities would be reduced and the effects of the boundary and zoning on the social environment in El Portal would be local, long-term, minor to moderate, and beneficial. The intensity of the impacts would depend on the level of development within the El Portal Administrative Site.

The implementation of VERP would result in management actions to maintain conditions at the established VERP standards. Management actions taken in response to the traffic indicator could include requirements for employees commuting to the Valley to use transit instead of private vehicles. Similarly, management actions taken to address natural resource impacts could include restrictions on the use of some employee recreation areas. VERP management actions that restrict recreation opportunities and employee commuting options would likely result in local, long-term, negligible to minor, adverse effects on the social environment.

Impacts in Wawona. Under Alternative 2, the interim facility limits would allow for some additional employee housing within the river corridor. This could result in an increase in employee housing in Wawona and a local, long-term, minor to moderate, adverse effect on the social environment due to pressures on local amenities and increased commutes to the Valley.

Implementation of VERP would result in management actions to maintain conditions at the established VERP standards. Management actions taken in response to the traffic indicator could include requiring employees who commute to the Valley to use transit instead of private vehicles. Similarly, management actions taken to address natural resource impacts could include restrictions on the use of some employee recreation areas. VERP management actions that restrict recreation opportunities and employee commuting options would likely result in local, long-term, negligible to minor, adverse effects on the social environment.

Summary of Alternative 2 Impacts. Implementation of interim facility limits and the VERP program, in addition to the other user capacity elements currently in place, could result in management actions that restrict activities within the river corridor, or could result in decisions to reduce employee housing in certain areas. These actions could cause local, long-term, minor to moderate, adverse effects on the social environments in El Portal, and Wawona related to the increase in employee housing, and increased commutes associated with employee relocations. The intensity of the adverse effect would depend on the level of housing relocations or reductions and the change in commute times, but would likely be minor to moderate. Effects on recreation are expected to be negligible to minor due to the broad range of recreational opportunities for residents in these areas. Economic impacts could be short- or long-term, beneficial or adverse, depending on the management action taken.

Cumulative Impacts

The discussion of the effects of past, present, and reasonably foreseeable future projects on the social environment was included under Alternative 1.

The cumulative projects would have a local, long-term, minor to moderate, adverse effect on the social environments within El Portal and Wawona due to increases in development and population and associated effects on community amenities and employee commutes. The intensity of the effects would depend upon the level to which the proposed projects are implemented.

Alternative 2 and the cumulative projects would have a local, long-term, minor to moderate, adverse cumulative effect on the social environments within the corridor due to increases in development within El Portal and Wawona and associated effects. The effects in El Portal would be expected to be lower as compared to Alternative 1, as the level of development would be lower. The impact intensity would depend upon the extent to which the cumulative projects' recommendations are implemented.

Visitor Populations

Analysis

Alternative 2 would implement interim facility limits and bus limits that would remain in place until the VERP program is providing sufficient management guidance on user capacity. Implementation of VERP would result in management actions to address conditions as needed, based upon monitoring of indicators representing desired conditions.

Implementation of interim facility limits under Alternative 2 would allow for an increase in camping in Yosemite Valley, resulting in a local, short and long-term, minor benefit to visitor populations. Implementation of the proposed bus limits would be negligible compared to bus levels expected under Alternative 1.

Implementation of the VERP program under Alternative 2 could result in management actions to address resource and visitor experience conditions that do not meet established standards. The effects of management actions would vary by the action taken. Less restrictive measures, such as visitor education or restrictions on activities in specific areas, are not expected to substantively affect visitor populations. More restrictive measures could reduce the number of day visitors through temporary access restrictions to the Valley, or temporary or permanent entrance station limits. Temporary limits would not have a long-term effect on overall park visitation. Permanent limits, implemented through entrance station restrictions or use reservations, could reduce visitor populations in the future compared to the No Action Alternative, which does not include specific limits. Park overnight visitor populations would not likely be reduced, since areas that support overnight accommodations are designated for intensive use, and management actions would be more likely to address potential effects through site improvements rather than reductions in accommodations.

The effects on visitor populations from interim facility limits and implementation of management actions under VERP would be negligible for the less restrictive measures, such as visitor education or limitations on activities in specific areas. The effects on visitor populations from temporary restrictions during peak periods would be local, short term, minor to moderate, and adverse. Permanent limits or restrictions are likely to result in local, long-term, moderate to major, adverse effects on visitor populations compared to Alternative 1. These restrictions would only be implemented in the event that VERP standards were not being met.

Summary of Alternative 2 Impacts. The interim facility limits and bus limits would result in local, short-term, minor, beneficial effects on visitor populations. Alternative 2 could result in local, short-term, minor to moderate, adverse effects on visitor populations or local, long-term, moderate to major, adverse effects on visitor populations, if restrictive management actions were implemented under VERP. The intensity of the effect would depend on the extent and duration of restrictions implemented under VERP.

Cumulative Impacts

The discussion of the effects of the cumulative projects on visitor populations was included under Alternative 1.

The cumulative projects would have a regional, long-term, negligible to minor, adverse impact on visitor populations due to the overall reduction in overnight accommodations in Yosemite Valley. This adverse effect would be offset somewhat by additional overnight accommodations being constructed outside the park.

Alternative 2 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a local, long-term, minor to major, adverse impact on visitor populations, depending on the management actions taken to ensure compliance with VERP standards.

Regional Economy

Analysis

Implementation of interim facility limits under Alternative 2 would allow for an increase in camping in Yosemite Valley, resulting in a local, short and long-term, minor benefit to the regional economy from increased visitor spending in the region. Implementation of the proposed bus limits would be negligible compared to bus levels expected under Alternative 1. Implementation of the VERP program under Alternative 2 could result in management actions to address resource and visitor experience conditions that do not meet established standards. These measures could range from education to temporary or long-term restrictions to increased visitor facilities.

VERP management actions that affect visitor populations, such as restrictions on specific activities, on the use of specific areas, or on the levels of day use within the river corridor would have the most effect on the regional population. The effect on the regional economy would differ depending upon the management actions taken. Temporary visitor restrictions or restrictions on specific activities within the corridor would likely result in local, short-term, negligible to minor, beneficial effects if visitors temporarily displaced from the park spend more time in regional communities. Longer term restrictions on levels of visitor use would likely result in long-term, regional, minor, adverse effects if visitors are restrictions were placed on day use levels and therefore fewer visitors attempted to reach the park. The intensity of the effects would depend on the duration and extent of any potential restrictions or use level reductions. Other management actions that might be taken to address VERP standards include the expansion of visitor facilities or site hardening in areas zoned for intensive visitor use, such as zones 3A and 3B. These actions could result in regional, long-term, negligible, beneficial effects on the regional economy through increased construction spending and employment.

Summary of Alternative 2 Impacts. Implementation of interim facilities and bus limits under Alternative 2 would likely result in a local, short- and long-term, minor benefit to the regional economy. Management actions implemented under VERP could have regional, long-term, negligible to minor, benefits to regional, long-term, minor, adverse effects depending upon the measure implemented.

Cumulative Impacts

The effects on the regional economy associated with past, present, and reasonably foreseeable projects are described under Alternative 1.

The cumulative projects would have a short-term, minor, beneficial effect on the regional economy, primarily due to construction spending and employment. The cumulative projects would have a long-term, negligible to minor, beneficial effect on the regional economy due to increased regional output and employment from increased overnight accommodations in the park and in local communities.

Alternative 2 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor, adverse cumulative impact on the regional economy if VERP results in long-term reductions in visitor populations and visitor spending compared to Alternative 1. These effects would be offset to some degree by an increase in construction employment and spending, which would have a short-term, negligible to minor, beneficial effect on the regional economy.

Concessioner

Analysis

Implementation of interim facility limits under Alternative 2 would allow for an increase in camping in Yosemite Valley, resulting in a local, short-term, minor benefit to concessioner operations. Alternative 2 also implements a bus limit which would allow for some increase in visitor numbers. The effects of the bus limit would be expected to be negligible, compared to Alternative 1. Implementation of the VERP program under Alternative 2 would result in management actions to address resource and visitor experience conditions that do not meet established standards. Measures to address these conditions could include restrictions on specific activities, on the use of specific areas, or on the levels of day use within the river corridor. Many activities available in the park are run by the concessioner, including raft rentals, horseback riding, and bicycling. In addition, concession food service sales, retail sales, and overnight accommodation receipts are directly affected by the number of visitors to the park. If management actions are taken that restrict activities offered by the concessioner or reduce visitor levels, there would be a local, long-term, adverse effect on concessioner operations. The intensity of the effect would depend on the duration and extent of the restrictions or reductions. Other management actions that might be taken to address VERP standards include the expansion of visitor facilities in areas zoned for intensive visitor use. These actions could result in local, long-term, beneficial effects on the concessioner.

Summary of Alternative 2 Impacts. Under Alternative 2, interim facility limits that allow for additional camping would result in local, short-term, minor, beneficial effects. Management actions taken to address VERP standards could result in restrictions on specific activities or more general restrictions on visitor levels, resulting in local, long-term, adverse effects on concessioner operations. The intensity of the effect would vary depending on the extent of the restrictions imposed. Management actions that increase visitor services could result in local, long-term, beneficial effects on concessioner operations.

Cumulative Impacts

The effects on concessioner operations from past, present, and reasonably foreseeable future actions were described under Alternative 1.

The cumulative projects would have a local, long-term, minor to moderate, adverse impact on the primary park concessioner associated with locating new employee housing outside of the Valley and possible restrictions on facilities and activities in wilderness areas. The adverse effect would be partially offset by increased accommodations being developed in Curry Village and at Yosemite Lodge. The impact intensity of any planning projects would depend on the extent to which the *Yosemite Valley Plan's* recommendations are implemented.

Alternative 2 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor to moderate, adverse impact on the concessioner associated with locating new employee housing outside of the Valley, possible restrictions on facilities and activities in wilderness areas, and the potential for additional restrictions on visitor levels and activities in Yosemite Valley. These effects might be offset by actions that increase visitor services within some areas of the Valley.

Park Operations and Facilities

The National Park Service is committed to the implementation of a User Capacity Management Program to protect and enhance the Merced River corridor's Outstandingly Remarkable Values. The park initiated monitoring associated with the VERP component of this program in 2004, a copy of the 2004 Annual Report is available on the park's website (www.nps.gov/yose/planning/ucmp.htm) and has secured funding for the continuation of this program through fiscal year 2008. In addition, the park has established a VERP Coordinator position and has retained a team of technical experts to assist with the development, refinement, and implementation of this program. The National Park Service is committed to implementation of this program beyond 2008 to fully comply with Wild and Scenic River's Act requirements and to achieve the goals and objectives of protecting and enhancing the Merced River corridor's Outstandingly Remarkable Values.

Analysis

The following discussion provides an overview of the types of impacts to park operations, infrastructure, facilities, and energy consumption that could occur within each segment of the Merced River corridor under Alternative 2. Effects on park operations from the revised corridor boundaries and zoning in El Portal are also addressed for the El Portal segment.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have an adverse effect on park operations. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to park operations associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to park operations are expected to be moderate, and adverse. Redirection of visitors could involve park staff from the Visitor and Resource Protection, Facility Maintenance, Business and Revenue Management and Interpretation and Orientation divisions during traffic management activities and get coordination with local communities and media outlets.

Park Operations

Impacts in Wilderness. User capacity within the Wilderness segments is currently addressed through the existing trailhead quota system and monitoring of wilderness resource conditions. Alternative 2 would implement the interim limits with VERP program in wilderness areas, which would result in additional monitoring of indicators. (VERP indicators to be monitored in Wilderness segments are listed in table II-5.) These indicators would be monitored as an additional element of ongoing ranger patrols and other existing park operations activities such as WIMS. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in Wilderness zones.

The additional VERP monitoring, reporting of results to the public, and the potential management actions in Wilderness segments of the river corridor are expected to increase park staff workloads. However, given the seasonal nature of wilderness use and the limited number of visitors to the wilderness as a result of the trailhead quota system, this increase in workload would likely result in a long-term, minor, adverse impact to park operations. It is not expected that additional park staff or new facilities would be necessary to implement the interim limits with VERP program in the Wilderness segments.

Impacts in Yosemite Valley. Implementation of Alternative 2 in Yosemite Valley would include the monitoring of indicators in various management zones. If VERP monitoring results indicated that the established standards were being exceeded, management actions would be implemented to maintain desired conditions in the Valley segment.

The additional VERP monitoring, reporting of results to the public, and the potential management actions in the Valley segment of the river corridor are expected to increase park staff workloads. This increase in workloads would likely result in an overall long-term, minor, adverse impact to park operations.

A bus limit in Yosemite Valley would require park operations to develop and implement a process to track buses entering the Valley, which represents a long-term, moderate, adverse impact on park operations. However, once implemented, the bus limit would represent a long-term, minor, beneficial impact to park operations by improving bus parking and traffic congestion.

Impacts in the Gorge. Implementation of Alternative 2 in the Gorge would include the monitoring of indicators in various management zones. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in the Gorge segment.

The Gorge segment has limited visitor and other facilities. The additional VERP monitoring, reporting of results to the public, and the potential management actions would likely increase park staff workloads. This increase in workloads would likely result in an overall long-term, minor, adverse impact to park operations.

Impacts in El Portal. Implementation of Alternative 2 in the El Portal Administrative Site would include the monitoring of indicators in various management zones. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in the El Portal segment.

The additional VERP monitoring, reporting of results to the public, and the potential management actions in the El Portal Administrative Site would likely increase park staff workloads. It is expected that this increase in workloads would result in overall long-term, minor, adverse impact to park operations.

With the river boundary and management zoning in El Portal under Alternative 2, approximately 411 acres would be zoned as Park Operations and Administration (3C), 192 acres would be zoned Day Use (2C) and 250 acres would be zoned Open Space (2A). The National Park Service would be required to protect and enhance ORVs in this segment in accordance with the Wild and Scenic Rivers Act in future planning efforts. Compared to Alternative 1, this alternative would provide less flexibility for park management to relocate utilities, facilities, and services to El Portal that are currently within park boundaries. Therefore, this river boundary and zoning represents a long-term, minor, adverse impact to park operations.

Impacts in Wawona. Implementation of Alternative 2 in the Wawona segments that are under park jurisdiction would include the monitoring of indicators in various management zones. The additional VERP monitoring, reporting of results to the public, and the potential management actions in the Wawona area would likely increase park staff workloads, resulting in an overall long-term, minor, adverse impact to park operations.

Park Infrastructure and Facilities

Impacts in Wilderness, Yosemite Valley, Gorge, El Portal, and Wawona. Implementation of Alternative 2 could require limited changes to, or the addition of, new park infrastructure and facilities such as boardwalks in meadows or restrooms in high use areas. In addition, there would be an increase in park housing on a corridorwide basis. Therefore, this alternative is expected to have long-term, minor, adverse impacts to park infrastructure and facilities related to an increase in maintenance and repair activities.

As in Yosemite Valley, a bus limit in Wawona would require park operations to develop and implement a process to track and enforce the limit, resulting in a long-term, moderate, adverse impact to park operations. However, once implemented, the bus limit would represent a long-term, minor, beneficial impact to park operations by improving bus parking and traffic congestion.

In the El Portal segment, approximately 411 acres would be zoned Park Operations and Administration (3C), 192 acres would be zoned Day Use (2C) and 250 acres would be zoned Open Space (2A). The National Park Service would be required to protect and enhance ORVs located in this segment in accordance with the Wild and Scenic Rivers Act in future planning efforts. Compared to Alternative 1, this alternative would provide less flexibility for park management to relocate utilities, facilities, and services to El Portal that are currently within park boundaries. Any changes to park infrastructure and facilities in Yosemite Valley, or the design and construction of new facilities in the El Portal Administrative Site, would represent a short-term, minor impact to existing park infrastructure and facilities.

Overall, the river corridor boundary and zoning under Alternative 2 would result in a long-term, moderate, beneficial impact to park infrastructure and facilities.

Energy Consumption

Impacts in Yosemite Valley, El Portal, and Wawona. Alternative 2 could increase the amount of employee housing, resulting in a long-term, minor, adverse impact on energy use in these segments compared to Alternative 1.

Impacts in Wilderness and the Gorge. Alternative 2 is not expected to increase or decrease overall energy consumption in these segments compared to Alternative 1 and thus would represent a negligible effect on park operations. Gasoline and diesel fuel consumption associated with vehicle use is expected to decline in the future due to improved fuel economy and an increased use of alternative fuels, resulting in an overall long-term, minor, beneficial impact with respect to energy consumption.

Summary of Alternative 2 Impacts. Implementation of a user capacity program that includes VERP and interim limits in the Wilderness, Yosemite Valley, Gorge, El Portal, and Wawona segments of the river corridor is not expected to require substantial changes to or the need for new park infrastructure and facilities, with the exception of additional employee housing that could occur on a corridorwide basis. Therefore, Alternative 2 would have a long-term, minor, adverse impact on park operations and park infrastructure and facilities.

In El Portal, the flexibility of the river boundary and zoning would result in an overall long-term, minor, adverse impact to park operations and park infrastructure and facilities.

Compared to Alternative 1, Alternative 2 would not increase the amount of energy consumed in the river corridor segments associated with increased employee housing within the river corridor, resulting in an overall long-term, minor, adverse impact with respect to energy consumption. However, gasoline and diesel fuel consumption associated with vehicle use is expected to decline in the future because of improved fuel economy and an increased use of alternative fuels.

Cumulative Impacts

The cumulative effects to park operations from past, present, and foreseeable future actions would be the same as those described for Alternative 1. Overall, these cumulative actions in combination with Alternative 2 could have a net long-term, minor, beneficial effect on park operations in the Merced River corridor.

Unavoidable Adverse Impacts

The following discussion identifies unavoidable adverse impacts to resources associated with implementation of Alternative 2, which implements a user capacity program within the river corridor and also includes interim facility limits as described in Chapter III. For the purposes of this document, these impacts have been identified as being unavoidable, moderate to major, and adverse.

No impacts associated with the implementation of Alternative 2 have been identified as being unavoidable, moderate to major, and adverse.

Irreversible and Irretrievable Commitments of Resources

This section identifies any resources that would be lost either temporarily or permanently as a result of Alternative 2. Alternative 2 would implement a VERP program with interim facility limits, and a revised boundary for the El Portal segment of the river based on the location of ORVs within a quarter-mile of the river (as described in Chapter III).

Relocating existing facilities and/or the development of new facilities in El Portal would result in the expenditure of energy to relocate or develop the facility. In addition, relocating existing facilities and/or construction of new facilities would involve an irreversible commitment of construction-related materials, such as concrete, asphalt, wood, and metal.

Similar to Alternative 1, energy consumption in the park will continue into the future resulting in an irreversible and irretrievable commitment of energy sources under Alternative 2. However, overall energy consumption is expected to decrease with time as the park converts to more efficient types of equipment, and fleet vehicle turnover occurs resulting in the use of more technically advanced and energy-efficient vehicles.

Relationship of Short-Term Uses of the Environment and Long-Term Productivity

The river corridor and management zoning associated with Alternative 2 for El Portal would allow for development of park administrative facilities within 219 acres of the 649 acres within the corridor (primarily north of the river). Potential development would occur in a manner which protects the ORVs within this management zone, however, these actions could temporarily adversely effect resources during construction. However, once completed, the relocated and/or newly constructed facilities would have a long-term benefit to park operations.

Responsiveness of Alternative 2 to the Ninth Circuit Court of Appeals' Direction on the Merced River Plan

The Ninth Circuit Court of Appeals directed the National Park Service to revise the Merced River Plan to address user capacity and to draw the boundaries in the El Portal segment in a manner that protects its ORVs. In addition, the District Court for the Eastern District of California directed the National Park Service to address how the Merced River Plan would amend the 1980 *General Management Plan.*

User Capacity

In addressing user capacity, the Court specifically directed the National Park Service to "adopt specific limits on user capacity consistent with both the Wild and Scenic Rivers Act and the instruction of the Secretarial Guidelines that such limits describe an actual level of visitor use that will not adversely impact the Merced's ORVs."

Alternative 2 includes each of the specific measurable limits on types and levels of use that are included within Alternative 1. (The analysis of those limits is incorporated herein.) In addition, Alternative 2 adopts a systematic VERP program and an array of interim limits on types and levels of visitor service and employee facilities within the river corridor. The interim facility limits established in Alternative 2 would remain in place for approximately 5 years, while the VERP program is being refined. As described previously in the VERP discussion, while some aspects of the VERP program may take several cycles of field testing, some aspects could be operational within a short time. The interim limits would not be eliminated at the end of 5 years, unless park managers were confident that the VERP program was providing sound guidance on appropriate types and levels of visitor use and adequate protection of the Outstandingly Remarkable Values within the river corridor. If changes proposed at this time would result in substantially different environmental consequences than were identified in this document, an appropriate level of NEPA compliance would be completed.

The specific interim facility limits under Alternative 2 would address both visitors and employees. Employee housing would be limited to housing for 1,969 employees within the corridor. (Employees are managed at the corridor level to allow the park flexibility in reassigning employees among various duty stations.) Day visitor use of the Valley would be limited by managing to existing parking levels in the east and west Valley (2,197 spaces total) and by limiting buses to 92 per day. (This limit does not apply to in-Valley shuttle buses which serve to reduce traffic congestion and do not add visitors to the Valley.) The adoption of the interim parking limit for Yosemite Valley would likely result in the need to implement restricted access policies several times each year during the peak season to maintain visitation within this limit. Under these policies, which are described under the No Action Alternative in Chapter III, park management may temporarily restrict vehicles from entering Yosemite Valley when traffic congestion reaches predetermined levels. Traffic is allowed to re-enter the Valley when congestion has decreased. Overnight lodging units in the Valley would be limited to their current level (1,262 units) and camping would be allowed to increase by 163 sites to 638. This level is well below the number of campsites that existed in the Valley prior to the January 1997 flood. Each of these limits is specific and measurable and will allow the National Park Service to regulate the number of people allowed in the Yosemite Valley segment.

Interim limits adopted in this Act will also regulate the numbers of visitors and employees in the other river segments. Visitor use of the Gorge and El Portal would also be limited during the interim period by managing these areas to existing parking levels (244 spaces and 360 spaces, respectively). Similarly, the Wawona area would be managed in the interim period to existing parking levels (213), and buses would be limited to 28 per day. Overnight lodging in Wawona would be limited to the existing level of 104 units, and camping would be limited to the existing level of 99 sites. No new campgrounds or lodging units would be allowed on park land in El Portal during the interim period. For Wilderness segments, no new campgrounds or trails would be allowed during this interim period, and use would continue to be managed by the Wilderness Trailhead Quota System and Wilderness Impact Management System.

Under this alternative, the National Park Service would also implement a VERP program. Under the VERP program, the National Park Service has adopted a host of indicators (measured variables) and standards (measured values) that reflect the qualitative conditions for the management zones in quantitative form. The standards have been set at levels designed to protect and enhance ORVs (see table II-5). The standards are scientifically measurable limits, and the standards would be measured through a monitoring program designed for each specific indicator. The standards provide clear, documented triggers for management action. If a standard is being met, management action is not required. If conditions were declining (but not yet fallen below a set standard), management action could be taken to improve the condition and forestall continued decline. If monitoring indicates that conditions do not meet established standards, management action must be taken. Table II-3 presents a list of the types of management actions that can be taken to address conditions documented through the VERP program. When the VERP program is providing adequate data to guide the protection and enhancement of ORVs, park management would eliminate the interim limits described above. Prior to lifting the interim limits, the park would present analysis to the public of how the VERP program is providing the required guidance to address user capacity.

Alternative 2 provides interim limits on use of the entire river corridor until the VERP program starts providing adequate data to address user capacity. After the interim period is concluded, the VERP program included in this alternative, along with the existing user capacity measures from the No Action Alternative, would provide an adequate array of specific, measurable limits on types and levels of use to ensure that the river's ORVs are being protected and enhanced. (The manner in which these user capacity program elements will enable ORVs to be protected is described in the environmental consequences discussion in this chapter.) As a result, Alternative 2 complies with the Court direction requiring specific, measurable limits on user capacity that will protect the river's ORVs.

El Portal Boundary

The Court directed that the National Park Service "redetermine the river area boundaries at El Portal" and that these boundaries "must be drawn so as to protect and enhance the ORVs causing that area to be included within the Wild and Scenic River System." In response to this direction from the court, the National Park Service gathered data on ORVs in El Portal, and used this data to inform the width of the boundaries and the zoning applied within those boundaries.

In El Portal, Alternative 2 proposes a quarter-mile river corridor boundary on each side of the river for the El Portal segment. The proposed zoning under Alternative 2 would allow development of park administrative and visitor use facilities within the corridor (in selected areas primarily north of the river), if it can be completed in a manner that protects the ORVs. Undeveloped areas south of the Merced River and select areas of sensitive resources north of the river are zoned 2C (Day Use) and 2A (Open Space). This places substantial limits on the types of development that could occur there. Park administrative uses such as employee housing and park offices could not be developed in 2C or 2A areas.

The additional data gathered on the location of ORVs together with the more restrictive zoning across a larger portion of the El Portal Administrative Site provide for the protection of ORVs. Further, all facility development proposed within the El Portal Administrative Site would undergo environmental compliance review, which would require the proposed development to be consistent with all of the elements of the Merced River Plan, including the protection and enhancement of ORVs.

The proposed boundary under Alternative 2 meets the Court direction to redraw the boundary so as to protect the ORVs for this segment of the river.

Amendments to the 1980 *General Management Plan*

The Wild and Scenic Rivers Act requires the managing agencies to prepare comprehensive management plans for the river and its immediate environment. The Merced River Plan, as revised by this document, provides direction on these issues for the 81 miles of the Merced Wild and Scenic River under the jurisdiction of the National Park Service.

Congress further authorized the National Park Service to prepare its management plan for the river by making appropriate revisions to the park's 1980 *General Management Plan* (16 USC 1274[a][62]). The Wild and Scenic Rivers Act generally provides that river management plans "shall be coordinated with and may be incorporated into resource management planning for affected adjacent Federal lands" (16 USC 1274).

While it is not the policy of the National Park Service retroactively to revise existing plans, Section 1274(a)(62) of the Wild and Scenic Rivers Act requires that the *General Management Plan* be revised to meet the requirements of section 1274(b). Accordingly, the Merced River Plan adopted in November 2000 resulted in the following amendments to the *General Management Plan*. The Merced River Plan's management zoning, River Protection Overlay, river corridor boundaries (with the exception of the El Portal segment) and classifications, and the ORVs revise the *General Management Plan* by establishing more detailed land-use prescriptions that must be applied in future site-specific planning. The Merced River Plan's Section 7 determination process is a tool that augments the goals of the *General Management Plan*. If selected, this alternative further revises the *General Management Plan* by adopting a new boundary and zoning plan for the El Portal area and by adopting a VERP monitoring and action plan. No development or use of park lands in the areas within the river corridor shall be undertaken that is inconsistent with the Wild and Scenic Rivers Act designation of the Merced River, or that is inconsistent with the Merced River Plan, as revised by the Revised Merced River Plan/SEIS.

General Management Plan Goals

The *General Management Plan* establishes five broad goals for managing Yosemite National Park (NPS 1980a, pp. 1-4). Although the *General Management Plan* is over 20 years old, its goals are still valid today and apply to the management of the Merced River corridor under the Merced River Plan. The Merced River Plan works in concert with the goals set forth in the *General Management Plan*, and outlines an additional set of specific goals for management of the Merced Wild and Scenic River (NPS 2000c, pp. 23-24). The Merced River Plan's five goals were developed to further the policy established by the Wild and Scenic Rivers Act, namely to preserve designated rivers in their free-flowing condition, and protect and enhance the river's ORVs. The five defining goals of the *General Management Plan* and the five goals of the Merced River Plan are intertwined, and no one goal can be emphasized to the complete exclusion of the others.

General Management Plan Management Objectives

The *General Management Plan* sets forth a number of Management Objectives that guide resource management, visitor use, and park operations (NPS 1980a, pp. 5-10). The elements of the Merced River Plan, including the revisions made by this alternative, provide an added level of detailed guidance to park managers on how to achieve management objectives for the park. Those elements are boundaries, classifications, protection of ORVs, Section 7 determination process, River Protection Overlay, management zoning, and VERP. For example, projects within the river corridor must protect and enhance ORVs and be consistent with the other elements of the Merced River Plan. Projects adjacent to the river corridor must protect ORVs, and depending on location, may need to undergo a Section 7 review if they affect the bed or banks of the river.

General Management Plan Land Management Zoning

The *General Management Plan* (NPS 1980a, pp. 10-13) specifies several land management zones, including a Development Zone. The management zones described in the Merced River Plan and the management zones proposed for the El Portal segment for Alternative 2 as illustrated in figure III-2 replace the Management Zoning Plan of the *General Management Plan* for those areas within the Merced Wild and Scenic River corridor boundaries. Zoning of areas outside the river corridor boundary remains unchanged, however development and uses in areas adjacent to the river corridor must be protective of ORVs, as provided for in the Merced River Plan.

General Management Plan Visitor Use

The Yosemite National Park *General Management Plan* was adopted in 1980. In that era, visitor carrying capacity for national park plans was based on the capacity of facilities and infrastructure. Changes to existing facilities and infrastructure were recommended to fulfill and support management objectives. In this method, facility capacity defined the visitor carrying capacity.

In the Yosemite 1980 *General Management Plan*, the total visitor capacity "goals" it established were well below the actual level of facilities. That is, the existing facility capacities were greater than the capacities deemed optimum by the plan. Thus the *General Management Plan* called, not only for a reduction in facility capacity, but relocation of many existing facilities out of Yosemite Valley. These goals to remove and relocate facilities have guided all park planning efforts subsequent to the *General Management Plan*, including this plan. (For a comparison of facility capacities, see tables III-7 and III-9).

In the 1990s, national scientific and scholarly research, and National Park Service policy discussions, resulted in the adoption a new methodology for determining visitor carrying capacity. This methodology—the VERP framework—is described in *Management Polices 2001* and in new Park Planning Program Standards signed in August 2004.

While the land use management zones and general management direction of the 1980 *General Management Plan* still largely meet the 2004 Park Planning Program Standards, the 1980 approach to visitor carrying capacities does not. In order to meet the new policy standards, Yosemite National Park will amend that element of the *General Management Plan* by translating the former carrying capacity approach to the more responsive VERP process through each new planning effort undertaken. The visitor carrying capacity approach proposed herein for the Revised Merced River Plan/SEIS would therefore amend the subject corridor portion of the *General Management Plan* with regard to carrying capacity.

In the future, overall visitation could increase or decrease under Alternative 2 as compared with *General Management Plan* levels. The overall level of park visitation, including the types and levels of use, would be informed by the results of monitoring as a component of the VERP program, which is designed to ensure visitor levels do not degrade Outstandingly Remarkable Values.

The addition of the interim limits on facilities and specific activities and the implementation of a VERP program with detailed standards and indicators will provide park managers with on-the-ground information on the condition of Outstandingly Remarkable Values. Thus, managers will make more informed decisions to further protect and enhance the Outstandingly Remarkable Values and natural river processes. The interim facility limits established in Alternative 2 would remain in place for approximately 5 years, while the VERP program is being refined. As described previously in the VERP discussion, while some aspects of the VERP program may take several cycles of field testing, some aspects could be operational within a short time. The interim limits would not be eliminated at the end of 5 years, unless park managers were confident that the VERP program was providing sound guidance on appropriate types and levels of visitor use and adequate protection of the Outstandingly Remarkable Values within the river corridor. If changes proposed at this time would result in substantially different environmental consequences than were identified in this document, an appropriate level of NEPA compliance would be completed. Since VERP serves as a type of report card on the condition of various Outstandingly Remarkable Values, the National Park Service has committed to providing the public with regular updates on the status of the VERP user capacity component.

In the long-term, the use of existing user capacity methods and the VERP program will allow the park to protect and enhance the Outstandingly Remarkable Values of the Merced River.

General Management Plan Developed Area Plans

The *General Management Plan* (NPS 1980a, pp. 31-59) contains Developed Area Plans for areas within and adjacent to the river corridor. Development Concepts for areas within the river corridor must comply with the management elements of the Merced River Plan, (boundaries, classifications, protection of ORVs, Section 7 determination process, River Protection Overlay, management zoning, and the park's user capacity management program). Therefore, the development concepts presented in the *General Management Plan* have been amended by the Merced River Plan for areas within the river corridor. In the case of El Portal, the new boundary and zoning proposal for this alternative would amend the *General Management Plan*'s development concept for El Portal. To the extent that any Development Concept is less restrictive than the Merced River Plan, as revised by this plan, the Merced River Plan controls. Actions adjacent to the river corridor but outside of the river boundary must also protect ORVs.

Table V-3 provides a summary of how this alternative affects the ORVs for each segment of the Merced River corridor.

Effect of Alternative 2 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 2 on the ORVs
MAIN STEM MERCED RIVER SEGMENTS		
1. Wilderness	*Scientific* – These segments of the river corridor constitute a highly significant scientific resource because the watershed is largely within designated Wilderness in Yosemite National Park.	*Scientific* – Alternative 2 would not affect the amount of the watershed which is within designated Wilderness. Alternative 2 would continue use of the Wilderness trailhead quota system, along with implementation of VERP, to manage visitor use in designated Wilderness. These measures would protect the natural, cultural and wilderness values and ensure that the river corridor continues to be a scientific resource.
	Scenic – This segment includes views from the river and its banks of the glaciated river canyon, exposed bedrock riverbed, Merced Lake and Washburn Lake, the Bunnell Cascade, the confluence of tributaries, a large concentration of granite domes, and the Clark and Cathedral Ranges.	*Scenic* – Implementation of Alternative 2 would not affect the scenic views of the canyon, the riverbed, cascades, or rock formations from the river and its banks.
	Geologic Processes/Conditions – This segment traverses a U-shaped, glacially carved canyon separated by cascades and soda springs below Washburn Lake.	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 2.
	Recreation – This segment provides outstanding opportunities for solitude along the river, with primitive and unconfined recreation. There is a spectrum of levels of recreational use. River-related recreational opportunities include day hiking, backpacking, horseback riding and packing, camping, and enjoyment of natural river sounds. Untrailed tributaries provide enhanced opportunities for solitude.	*Recreation* – Under Alternative 2, visitor use of wilderness areas would continue to be managed under the existing trailhead quota system along with VERP. Under Alternative 2, VERP would protect the opportunities for solitude by tracking visitor encounters and taking management actions to reduce encounters, as needed. A spectrum of river-related recreational opportunities would continue to be available to wilderness visitors.
	Biological – This segment includes a nearly full range of intact Sierran riverine environments; high-quality riparian, meadow, and aquatic habitats (such as the meadow at Washburn Lake), and special-status species such as mountain yellow-legged frog.	*Biological* – Under Alternative 2, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quotas, WIMS, etc.) and through VERP. Implementation of these measures would protect the biological resources from visitor use-related impacts.
	Cultural – This segment includes portions of a prehistoric trans-Sierra route in use for thousands of years and many prehistoric sites. There are many historic resources such as homestead sites, trails, river crossings, High Sierra Camp sites, and structures.	*Cultural* – Under Alternative 2, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quotas, WIMS, etc.) and through VERP. Implementation of these measures would protect cultural resources from visitor use-related impacts.
	Hydrologic Processes – The segment is characterized by a free-flowing river and excellent water quality. The river gradient drops from 13,000 to 6,000 feet in elevation. There are examples of natural conditions, including glacial remnants, a logjam in Little Yosemite Valley that is hundreds of years old, and numerous cascades.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character, its gradient, glacial remnants or cascades. Water quality in wilderness areas would be protected under Alternative 2 through existing limits on visitor use in wilderness and through implementation of VERP with monitoring of water quality conditions and management action taken as needed to address any adverse change in conditions.
Main Stem-Wilderness Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Wilderness segment by managing development or uses in wilderness areas that would adversely affect hydrologic processes.

Table V-3
Effect of Alternative 2 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 2 on the ORVs
2 Yosemite Valley	*Scenic* – This segment provides magnificent views from the river and its banks of waterfalls (Nevada, Vernal, Illilouette, Yosemite, Sentinel, Ribbon, Bridalveil, and Silver Strand), rock cliffs (Half Dome, North Dome/Washington Column, Glacier Point, Yosemite Point/Lost Arrow Spire, Sentinel Rock, Three Brothers, Cathedral Rock, and El Capitan), and meadows (Stoneman, Ahwahnee, Cook's, Sentinel, Leidig, El Capitan, and Bridalveil). There is a scenic interface of river, rock, meadow, and forest throughout the segment.	*Scenic* – Implementation of Alternative 2 would not affect the scenic views of waterfalls and rock cliffs from the river and its banks. Implementation of Alternative 2 would protect and enhance the scenic views of meadows through management of visitor use in the Valley and implementation of management actions under VERP, as needed, to address visitor-related impacts in meadows.
	Geologic Processes/Conditions – This segment contains a classic, glaciated, U-shaped valley, providing important examples of a mature meandering river; hanging valleys such as Yosemite and Bridalveil Creeks; and evidence of glaciation (e.g., moraines below El Capitan and Bridalveil Meadows).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 2.
	Recreation – This segment offers opportunities to experience a spectrum of river-related recreational activities, from nature study and sightseeing to hiking. Yosemite Valley is one of the premier outdoor recreation areas in the world.	*Recreation* – Implementation of Alternative 2 would protect and enhance recreation in the Valley through management of visitor use in the Valley and management actions taken under VERP, as needed, to address visitor experience conditions. Visitors would continue to have access to a spectrum of river-related recreational opportunities.
	Biological – Riparian areas and low-elevation meadows are the most productive communities in Yosemite Valley. The high quality and large extent of riparian, wetland, and other riverine areas provide rich habitat for a diversity of river-related species, including special-status species, neotropical migrant songbirds, and numerous bat species.	*Biological* – Implementation of Alternative 2 would protect and enhance low-elevation meadows, wetlands, riparian areas, and other riverine areas through management of visitor use in the Valley and implementation of management actions under VERP, as needed, to address visitor-related impacts in sensitive areas.
	Cultural – This segment contains evidence of thousands of years of human occupation reflected in a large number of archeological sites and continuing traditional use today Nationally significant historic resources are found here, such as designed landscapes and developed areas, historic buildings, and circulation systems (trails, roads, and bridges) that provide visitor access to the sublime views of natural features that are culturally valuable.	*Cultural* – Implementation of Alternative 2 would protect and enhance cultural resources through management of visitor use in the Valley and implementation of management actions under VERP, as needed, to address visitor-related impacts on cultural resources.
	Hydrologic Processes – This segment is characterized by a meandering river, world-renowned waterfalls, an active flood regime, oxbows, unique wetlands, and fluvial processes.	*Hydrologic Processes* – Visitor use would not affect the Valley's spectacular waterfalls or the river's meandering character, flood regime, or fluvial processes. Implementation of Alternative 2 would protect and enhance wetlands through management of visitor use in the Valley and implementation of management actions under VERP, as needed, to address visitor-related impacts on wetland areas.
Yosemite Valley Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Yosemite Valley by managing development or uses that would adversely affect the ORVs of the segment.
3. Gorge[a]	*Scenic* – This segment provides views from the river and its banks of the Cascades, spectacular rapids among giant boulders, Wildcat Fall, Tamarack Creek Fall, the Rostrum, and Elephant Rock.	*Scenic* – Implementation of Alternative 2 would not affect the scenic views of the Cascades, rapids, waterfalls, or rock formations from the river and its banks.
	Geologic Processes/Conditions – This segment is characterized by a classic V-shaped river gorge with a continuous steep gradient.	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 2.

Table V-5
Effect of Alternative 2 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 2 on the ORVs
	Recreation – This segment provides a spectrum of river-related recreational opportunities, such as picnicking, fishing, photography, and sightseeing.	*Recreation* – Implementation of Alternative 2 would protect and enhance recreation in the Gorge by managing visitor use levels and implementing management actions under VERP, as needed, to address visitor experience conditions. Visitors would continue to have access to a spectrum of recreational opportunities.
	Biological – This segment is characterized by diverse riparian areas and associated special-status species that are largely intact and almost entirely undisturbed by humans.	*Biological* – Implementation of Alternative 2 would protect and enhance the diverse riparian areas and their associated special-status species through management of visitor use in the Gorge and implementation of specific management actions taken under VERP, as needed, to address visitor-related impacts on riparian areas and related species.
	Cultural – This segment contains cultural resources, including prehistoric sites and historic sites and structures such as those relating to historic engineering projects.	*Cultural* – Implementation of Alternative 2 would protect and enhance cultural resources through management of visitor use in the Gorge and implementation of management actions under VERP, as needed, to address visitor-related impacts.
	Hydrologic Processes – This segment is characterized by exceptionally steep gradients (2,000-foot elevation drop in approximately 6 miles).	*Hydrologic Processes* – These hydrologic processes are not sensitive to visitor use impacts, and would not be affected by Alternative 2.
Gorge Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Gorge segment by managing development or uses that would adversely affect the ORVs of the segment.
4. El Portal	*Geologic Processes/Conditions* – This segment contains a transition from igneous to metasedimentary rocks (metasedimentary rocks are among the oldest in the Sierra Nevada).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, or to the proposed corridor boundary and management zoning for El Portal, and would not be affected by Alternative 2.
	Recreation – This segment provides a range of river-related recreational opportunities, in particular whitewater rafting and kayaking (class III to V) and fishing.	*Recreation* – Implementation of Alternative 2 would protect and enhance recreation in El Portal through management of visitor use in El Portal and implementation of specific management actions, as needed, to address visitor experience conditions. The proposed El Portal boundary and the management zoning proposed may benefit access to the spectrum of recreational opportunities in El Portal.
	Biological – This segment contains riverine habitats such as riparian woodlands and associated federal and state special-status species, including Tompkin's sedge and Valley elderberry longhorn beetle and its critical habitat (elderberry shrub). Expanses of north-facing habitat allow unlimited access to the riparian zone for wildlife species.	*Biological* – Implementation of Alternative 2 would protect and enhance these biological resources through management of visitor use in El Portal, implementation of specific management actions taken under VERP, as needed, to address visitor-related impacts, and implementation of the proposed boundary and zoning.
	Cultural – This segment contains some of the oldest archeological sites in the Yosemite area, as well as many historic Indian villages and traditional gathering places. River-related historic resources include structures related to early tourism and industrial development.	*Cultural* – Implementation of Alternative 2 would protect and enhance cultural resources through implementation of a quarter-mile boundary. In addition, management of visitor use in El Portal and implementation of management actions under VERP, as needed, to address visitor-related impacts, would protect and enhance cultural resources.
	Hydrologic Processes – This segment is characterized by seasonally continuous rapids	*Hydrologic Processes* – These hydrologic processes are not sensitive to visitor use impacts, and would not be affected by Alternative 2.

Table V-3
Effect of Alternative 2 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 2 on the ORVs
El Portal Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the El Portal segment by managing development or uses that would adversely affect the ORVs of the segment.
	SOUTH FORK MERCED RIVER SEGMENTS	
5 Wilderness	*Scientific* – These segments of the river corridor constitute a highly significant scientific resource because the watershed is largely within designated Wilderness in Yosemite National Park.	*Scientific* – Alternative 2 would not affect the amount of the watershed within designated Wilderness. Alternative 2 would continue use of the trailhead quota system, along with implementation of VERP, to manage visitor use in designated Wilderness. This would protect the natural, cultural, and wilderness values and ensure that the river corridor continues to be a scientific resource.
	Scenic – This segment provides views from the river and its banks of unique river features, including large pothole pools within slickrock cascades, old growth forest, and meadows.	*Scenic* – Implementation of Alternative 2 would not affect the scenic views of pothole pools within slickrock cascades or old growth forest. Under Alternative 2, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quotas, WIMS, etc.) and through VERP. Implementation of these measures would protect meadows and other sensitive areas from visitor use-related impacts.
	Geologic Processes/Conditions – This segment is characterized by glaciated valleys in the high country and V-shaped canyons above Wawona. Moraine meadows and soda springs above Gravelly Ford are also unique, river-related geologic features.	*Geologic Processes/Conditions* – Most of these geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 2. Under Alternative 2, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quotas, WIMS, etc.) and through VERP. Implementation of these measures would protect meadows and other sensitive areas from visitor use-related impacts.
	Recreation – This segment provides outstanding opportunities for river-related solitude, enjoyment of natural river sounds, and primitive and unconfined recreation. This segment of the river is predominantly without trails, with the exception of four bridgeless trail crossings in the upper reaches of the segment.	*Recreation* – Under Alternative 2, visitor use of wilderness areas would continue to be managed under the existing trailhead quota system along with VERP. Under Alternative 2, VERP would protect the opportunities for solitude by tracking visitor encounters and taking management actions to reduce encounters, as needed. Visitors to this segment would continue to have access to outstanding river-related recreation opportunities.
	Biological – This segment includes a nearly full range of riverine environments typical of the Sierra Nevada. Examples of river-related federal and state special-status species include Wawona riffle beetle and mountain yellow-legged frog.	*Biological* – Under Alternative 2, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quotas, WIMS, etc.) and through VERP. Implementation of these measures would protect the riverine communities and special-status species from visitor use-related impacts.
	Cultural – This segment includes river-related prehistoric sites and resources and reflects historic stock use and cavalry activities.	*Cultural* – Under Alternative 2, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quotas, WIMS, etc.) and through VERP. Implementation of these measures would protect cultural resources from visitor use-related impacts.

Table V-3
Effect of Alternative 2 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 2 on the ORVs
	Hydrologic Processes – This segment is characterized by a free-flowing river and excellent water quality.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character. Water quality in wilderness areas would be protected under Alternative 2 through existing limits on visitor use in wilderness and through implementation of VERP with monitoring of water quality conditions and management action taken as needed to address any adverse change in conditions.
South Fork-Wilderness Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the South Fork Wilderness segment by managing development or uses that would adversely affect the ORVs of the segment.
6. Impoundment[b]	*Scenic* – This segment provides views from the river and its banks of the river and Wawona Dome.	*Scenic* – Implementation of Alternative 2 would not affect the scenic views of the river or Wawona Dome.
	Hydrologic Processes – This segment has excellent water quality.	*Hydrologic Processes* – Water quality would be protected under Alternative 2 through implementation of VERP with monitoring of water quality conditions and management action taken as needed to address any adverse change in conditions.
Impoundment Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Impoundment segment by managing development or uses that would adversely affect the segment's ORVs.
7 Wawona	*Scenic* – This segment provides views from the river and its banks of Wawona Dome.	*Scenic* – Implementation of Alternative 2 would not affect the scenic views of the river or Wawona Dome.
	Recreation – This segment offers opportunities to experience a spectrum of river-related recreational activities, from nature study and photography to hiking.	*Recreation* – Implementation of Alternative 2 would protect and enhance recreation in Wawona through management of visitor use levels through existing programs and implementation of management actions under VERP, as needed, to address visitor experience conditions. Visitors to Wawona would still have access to a spectrum of recreational opportunities.
	Biological – This segment contains a diversity of river-related species, wetlands, and riparian habitats. There are federal and state special-status species in this segment, including the Wawona riffle beetle.	*Biological* – Implementation of Alternative 2 would protect and enhance wetlands, riparian habitats, and special-status species through management of visitor use levels and management actions taken under VERP, as needed, to address visitor-related impacts to sensitive vegetation or species.
	Cultural – This segment contains evidence of thousands of years of human occupation, including numerous prehistoric and historic Indian villages, historic sites, structures, and landscape features related to tourism, early Army and National Park Service administration, and homesteading.	*Cultural* – Implementation of Alternative 2 would protect and enhance cultural resources through management of visitor use and implementation of management actions under VERP, as needed, to address visitor-related impacts on cultural resources.

Table V-3
Effect of Alternative 2 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 2 on the ORVs
Wawona Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Wawona segment by managing development or uses that would adversely affect the segment's ORVs.
8 Below Wawona	*Scenic* – This segment provides views from the river and its banks of continual whitewater cascades in the deep and narrow river canyon in a untrailed, undisturbed environment.	*Scenic* – Implementation of Alternative 2 would not affect the scenic views of whitewater cascades or untrailed, undisturbed environment
	Geologic Processes/Conditions – This segment contains a transition from Paleozoic Era igneous to Cretaceous Period metasedimentary rocks (metasedimentary rocks are among the oldest in the Sierra Nevada).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 2.
	Recreation – This segment provides outstanding opportunities for river-related solitude, enjoyment of natural river sounds, and primitive and unconfined recreation in an untrailed, undisturbed environment. River-related recreational opportunities include hiking, fishing, and whitewater kayaking.	*Recreation* – Implementation of Alternative 2 would protect and enhance recreation through management of visitor use levels and implementation of management actions under VERP, as needed, to address visitor experience conditions. Visitors will continue to have access to outstanding river-related recreational opportunities.
	Biological – This segment is characterized by diverse riparian areas that are intact and largely undisturbed by humans. River-related federal and state special-status species in this segment include the Wawona riffle beetle.	*Biological* – Implementation of Alternative 2 would protect riparian areas and special-status species through management of visitor use and implementation of management actions under VERP, as needed, to address visitor-related impacts in sensitive areas.
	Cultural – This segment contains archeological sites and historic resources such as trail segments representing early cavalry activity.	*Cultural* – Implementation of Alternative 2 would protect and enhance cultural resources through management of visitor use and implementation of management actions under VERP, as needed, to address visitor-related impacts on cultural resources.
	Hydrologic Processes – This segment is characterized by a free-flowing river with continual whitewater cascades.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character and whitewater cascades.
Below Wawona-Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Below Wawona segment by managing development or uses that would adversely affect the segment's ORVs.

NOTES

a The Cascades Diversion Dam was removed in 2004 The segment that was formerly designated as 3a has been combined with the segment formally designated 3b and this entire area forms segment 3.

b The Impoundment would become part of segment 7, Wawona, if an alternative water source for the area was secured and the impoundment was removed.

Alternative 3: VERP Program with Segment Limits

The environmental consequences analysis for Alternative 3 addresses elements of the user capacity program for the entire Merced River corridor and the river corridor boundary as well as associated management zone prescriptions for the El Portal segment specific to Alternative 3. It does not provide an analysis of impacts that could be associated with elements of the park's existing user capacity programs as identified in Alternative 1. Similarly, this analysis does not address other existing management elements for the Merced River corridor that were previously described and analyzed in the Merced River Plan/FEIS.

Natural Resources

Geology, Geohazards, and Soils

Analysis

The following discussion provides an overview of the types of impacts that could occur under Alternative 3 with respect to geohazards (rockfall and seismic hazards), and soils.

Rockfall Hazards. Under Alternative 3, rockfall hazards would remain essentially the same as described for Alternative 1, with the possible exception that (1) established limits could result in fewer visitors being exposed to rockfall hazards in certain areas of the river corridor, and (2) management actions taken in response to indicators unrelated to rockfall hazards under the VERP program with daily segment limits could reduce the number of users exposed to rockfall hazard in some areas. The effects of either of these potential exceptions on rockfall hazard impacts would likely be negligible under Alternative 3. Current park management policies and the *Yosemite Valley Geologic Hazard Guidelines*, which require most new facilities and uses to be placed outside the talus zone and the rockfall shadow zone, would continue to be implemented, and, in the near term, visitation levels would be similar to existing levels. In addition to current management programs and policies, the daily segment limits and VERP program that would be implemented under Alternative 3 establish user capacity limits and provide for management actions that would be triggered to achieve or maintain established standards. Some of these management actions would have the effect of limiting users in some areas. As a result, in the long term, implementation of the VERP program with daily segment limits is expected to reduce future visitation levels under Alternative 3 compared with future, long-term visitation levels under Alternative 1. This would, in turn, result in somewhat fewer users exposed to rockfall hazards, and therefore would be a minor, beneficial effect of this alternative.

Seismic Hazards. Potential seismic hazards in the Merced River corridor would be the same under Alternative 3 as described for Alternative 1.

As described under Alternative 1, current park management policies regarding geohazards would continue to be implemented, and, in the near term, visitation levels under Alternative 3 would be similar to those under Alternative 1. The VERP program and daily segment limits under Alternative 3, in addition to current management programs and policies, provide for specific user limits and management actions that would be triggered to achieve or maintain established standards. The combination of daily segment limits and VERP management actions would have the effect of limiting users in some areas. As a result, in the long term, Alternative 3 is expected to slightly lower visitation levels that could reasonably be expected to occur compared to Alternative

1.This would, in turn, result in fewer users being exposed to earthquake ground shaking hazards, and therefore would be a minor, beneficial effect.

Impacts to Soils. Under Alternative 3, as under Alternatives 1 and 2, soils along most of the river corridor would remain relatively undisturbed and uncompacted. Under Alternative 3, the management would implement VERP indicators and standards as described under Alternative 2. Although only one of these indicators is explicitly concerned with soil erosion, the indicators related to intensity of visitor use and effects of visitor use on vegetation also reflect impacts on soils, and the standard associated with each indicator would provide a management tool that could protect soils from excess compaction and erosion. Similarly, s would help prevent erosion or compaction impacts that result from concentrated visitor use in some areas. Until VERP is fully operational, it might not be apparent what effect daily segment limits have on the frequency with which management actions would be triggered by VERP monitoring.

Management actions associated with the redirection of visitors from compacted soils in sensitive areas and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Under Alternative 3, visitor use could continue to affect soils by contributing to erosion, soil compaction, and removal of surface soils. Excessive surface water runoff or loss of protective vegetation cover could cause erosion. Compaction of native soils could occur through concentrated visitor use in localized areas or excessive vehicular traffic in unpaved areas. In the long term, compared to Alternative 1, implementation of a VERP program combined with daily segment limits as provided under Alternative 3 would reduce adverse impacts to Yosemite soils.

The boundary for the El Portal segment of the Merced River corridor in Alternative 3 would be a quarter-mile wide. The zoning for this alternative would provide for primarily high-intensity use north of the river, which is largely zoned for Park Operations and Administration (3C). Except for the existing Murchison structures and Trailer Village/Abbieville, which are zoned 3C, the area south of the river is zoned for Discovery (2B). The zoning provides the potential for much of the land north of the river to be used for administrative purposes. As with Alternative 1, future construction of administration facilities as allowed under this boundary and zoning could cause erosion of exposed soil. Temporary construction-related erosion could occur during periods of rain, while soil is exposed, and prior to the site restoration and cleanup phases of the future projects. Erosion and soil loss typically occur immediately after initial site grading or following construction of a fill slope with exposed soil. As described under Alternative 1, impacts associated with construction-period soil erosion and sedimentation would be mitigated through preparation and implementation of a stormwater pollution prevention plan. Therefore, erosion and soil loss associated with grading and construction activities would result in a local, short-term, minor, adverse impact. Long-term soil degradation would be minimal due to erosion controls and the intermittent nature of the grading activities. Therefore, relative to Alternative 1, Alternative 3 would have similar effects on soil erosion from future construction activities at the El Portal Administrative Site. Implementation of the VERP program and daily segment limits, in conjunction with the proposed El Portal boundary and zoning, would ensure that management actions would be taken to achieve or maintain established standards with respect to trails, riverbank erosion, vegetation, and other indicators. Thus, Alternative 3 would result in a local, long-term, minor, beneficial impact on soil resources.

Summary of Alternative 3 Impacts. In the short term, impacts related to rockfall and seismic hazards would be unchanged from Alternative 1 because the number of users exposed to these hazards would be approximately the same. In the long term, fewer users would be exposed to rockfall hazards under Alternative 3 than under Alternative 1 due to somewhat lower visitation levels in the future resulting from management actions under the VERP program and daily segment limits. For the same reason, in the long term, slightly fewer users would be exposed to earthquakes and associated seismic hazards under Alternative 3; therefore, compared to Alternative 1, Alternative 3 would have a minor beneficial impact on public safety associated with seismic hazards. Compared to Alternative 1, Alternative 3 would have similar effects on soil erosion from future construction at the El Portal Administrative Site. However, efforts to protect biological and recreation ORVs through implementation of the VERP program, including management actions to achieve the identified standards and application of specified user limits along the different segments of the river, would have a long-term, minor, beneficial impact on soil resources. The implementation of day-use limits in Little Yosemite Valley would also limit the number of people able to climb Half Dome. This restriction would provide a localized, long-term, negligible to minor, beneficial impact to the soils in the Little Yosemite Valley and Half Dome areas compared to Alternative 1. The combined adverse and beneficial impacts to soil resources under Alternative 3, compared with Alternative 1, would be long term, minor, and beneficial.

Alternative 3 will continue to enhance and protect the identified geologic processes/conditions ORVs within the individual river segments.

Cumulative Impacts

Cumulative impacts to geologic resources, geohazards, and soil resources under Alternative 3 would be the same as described for Alternative 1.

Although rockfalls and earthquakes are unpredictable and unavoidable by nature, rockfall and earthquake hazards under Alternative 3 and the cumulative projects would result in a local, long-term, minor, beneficial impact to public safety in Yosemite National Park and the El Portal Administrative Site. This beneficial impact would be due to the smaller increase in long-term visitation levels under Alternative 3 compared to Alternative 1 and to efforts by the National Park Service to relocate critical facilities outside the talus slope and rockfall shadow zone, to avoid construction of new facilities in these hazard areas, and to conduct appropriate geotechnical studies prior to construction of facilities on soils susceptible to seismic ground shaking. The projects, in combination with Alternative 3, would result in a net regional, long-term, minor, beneficial impact on soil resources.

Impairment

Compared to Alternative 1, Alternative 3 would have a local, long-term, minor, beneficial impact on geologic resources and soils. Therefore, Alternative 3 would not impair geologic resources for future generations.

Hydrology, Floodplains, and Water Quality

Analysis

The following discussion provides an overview of the types of impacts to hydrology, floodplains, and water quality that could occur within each segment of the Merced River corridor under Alternative 3.

Management actions associated with the redirection of visitors from floodplains and adjacent areas and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. The hydrologic processes ORV in the Wilderness segments of the river corridor is characterized the river's free-flowing condition and excellent water quality. The ORV description also notes the river gradient, the natural conditions (e.g., glacial remnants, a logjam in Little Yosemite Valley), and numerous cascades. Of the qualities described in the ORV, most are relatively insensitive to user-related impacts, with the exception of water quality. Water quality in Wilderness segments is considered to be excellent.

User capacity within wilderness areas of Yosemite National Park (including those portions within the river corridor in both the Main Stem Wilderness and South Fork Wilderness segments) is addressed through the trailhead quota system and monitoring of wilderness resource conditions. Similar to Alternative 2, implementation of the VERP program with daily segment limits for the Wilderness segments would result in additional monitoring of indicators within wilderness areas. VERP indicators to be monitored in Wilderness management zones are listed in table II-5.

The removal of up to 3,000 gallons of water per day from the Merced River to support functions at the Merced Lake High Sierra Camp during the summer (when this camp is open to the public) represents a negligible impact to the river's hydrologic processes at or downstream of the point of withdrawal. This negligible impact is due to the small daily withdrawal volumes when compared to overall river flows in this area.

The impacts of the management actions implemented as a result of VERP would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on water resources. Management actions such as visitor education would be expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, and water pollution. Educational efforts would be expected to result in local, short- and long-term, negligible to minor, beneficial impacts on hydrology and water quality. More restrictive measures, such as the reduction of trailhead quotas or restrictions on stock use, could have beneficial effects due to reduced trampling of vegetation by people and stock, reduced soil compaction, and reduced waste loads. These actions would be expected to result in local, long-term, minor to moderate, beneficial impacts on hydrology and water quality. Finally, measures taken to close and/or restore areas would be expected to result in local, long-term, minor to moderate, beneficial effects on water resources associated with restoration of vegetative cover, reduced soil compaction, and reduced erosion.

In wilderness areas, few structures are permitted to be constructed, and Alternative 3 would not affect the floodplain or its ability to accommodate flood flow.

VERP monitoring in conjunction with actively managing the number of people entering the Wilderness segments of the river corridor would provide an additional level of protection for the hydrologic processes ORV. If VERP monitoring indicates that the hydrologic processes ORV is being protected and enhanced, it is expected that park management would maintain the wilderness trailhead quota system as it is currently being implemented. However, if VERP monitoring indicates that the hydrologic ORV is not being protected and enhanced, then management actions would be implemented to reduce the number of people allowed to enter the wilderness (i.e., reduce the trailhead quota) to an appropriate level until subsequent monitoring indicates that the hydrologic ORV is being protected and enhanced.

Visitation to the Wilderness segments of the river corridor is seasonal in nature and is controlled through the park's trailhead quota system. This program gives park management the tools to ensure that the hydrologic processes ORV would be protected and enhanced. Thus, this alternative is expected to result in local, long-term, negligible to moderate, beneficial impacts on hydrology, water quality, and the hydrologic processes ORV. Under Alternative 3, additional day-use limits would be implemented in Little Yosemite Valley, resulting in a local, short- and long-term, negligible to minor, beneficial effect on the hydrologic ORVs by helping to minimize soil compaction and erosion in this area of the river corridor.

Impacts in Yosemite Valley. The hydrologic processes ORV in Yosemite Valley includes the river's meandering character, world-class waterfalls, an active flood regime, oxbows, unique wetlands, and fluvial processes. Many of these qualities are insensitive to user-related impacts and would be more directly affected by development within the floodplain. User-related impacts could affect wetlands and other vegetation within the river corridor, which could result in the loss of vegetative cover, and increased erosion and sedimentation. In addition, visitor use of the river and use of camping and parking areas near the river could result in increased water pollution through stormwater runoff and other means.

Implementation of VERP under Alternative 3 would be the same as described under Alternative 2. The effects of these management actions in Yosemite Valley would vary by the action taken. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects. More restrictive measures are expected to result in local, short- and long-term, minor benefits to hydrology and water quality. Closure and restoration of riparian areas is expected to result in local, long-term, minor to moderate benefits to hydrology and water quality. Site-hardening activities, such as construction of boardwalks or picnic facilities, could have local, short-term, adverse effects related to soil disturbance, soil compaction, and erosion and sedimentation associated with construction activities. The long-term effects associated with boardwalks is expected to be local, minor to moderate, and beneficial due to reduced trampling in sensitive vegetated areas and reduced impacts to surface and groundwater hydrology related to the creation of social trails, compacted soils, and trampled vegetation in riverside areas. Floodplains and their ability to accommodate flood flow would not be substantively affected by most management actions. Construction of boardwalks or other day-use facilities would be required to comply with floodplain guidance and would have local, long-term, negligible, adverse effects on floodplains.

The implementation of a daily segment limit system in the Valley is expected to provide an additional level of protection for the hydrologic processes ORV when used in conjunction with VERP. Although the daily segment limits for the Valley would likely be implemented only in the summer during periods of peak use (typically weekends and around holidays), limiting the number of visitors in the Valley during these periods would add an incremental level of protection to the hydrologic ORV. Restricting the total number of people having access to the river and its adjacent floodplain would help to control the potential for increased water quality impacts and damage to the riverbank.

Overall, Alternative 3 would limit the number of visitors entering the Valley during times of peak usage and add an incremental level of protection for the hydrologic processes ORV over that provided by the VERP program alone. However, this additional protection is expected to be relatively small, because the limit system under Alternative 3 would likely be implemented only a few times in the summer during periods of peak use. Implementation of the VERP program combined with a daily segment limit system for the Valley is expected to prevent visitor use from adversely affecting the hydrologic processes ORV. This would result in a long-term, minor, beneficial impact to hydrology, water quality, and hydrologic processes in the Valley. Impacts on floodplains are expected to be negligible.

Impacts in the Gorge. The hydrologic processes ORV for the Gorge segment is related to the steep gradient of the river. This ORV is not readily susceptible to user-related impacts.

The effects of VERP management actions within the Gorge segment would vary by the action taken. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures are expected to result in local, short- and long-term, minor benefits to hydrology and water quality. Closure and restoration of riparian areas is expected to result in local, long-term, minor to moderate benefits to hydrology and water quality. Site-hardening activities would be considered only within areas zoned Attraction (2D) or Park Operations and Administration (3C). Site hardening, such as construction of parking or picnic facilities, could have local, short-term, adverse effects related to soil disturbance, soil compaction, and erosion and sedimentation associated with construction activities. However, these facilities would be located in areas designated for higher intensity uses and would likely reduce the unofficial use of areas designated for less-intensive use. Therefore, the long-term effects associated with site improvements are expected to be local, minor, and beneficial.

The implementation of daily segment limit system in the Gorge segment is expected to have a negligible to minor, beneficial effect on the hydrologic processes ORV. Overall, implementation of the VERP program through monitoring of indicators for each zone, the implementation of appropriate management actions based on monitoring results, and the implementation of a daily segment limit system that would limit the number of people able to stop and enjoy the river in the Gorge segment during times of peak use would add an incremental level of protection for the hydrologic ORV over that provided by the VERP program alone. However, this additional protection is expected to be negligible to minor because daily segment limits would likely be implemented only a few times in the summer during times of peak use. Therefore, implementation of the VERP program in combination with a daily segment limit system for the Gorge segment is expected to prevent visitor use from adversely affecting the hydrologic processes ORVs. This would result in a long-term, minor, beneficial impact to hydrology, water quality, and hydrologic processes in the Gorge. Impacts on floodplains are expected to be negligible.

Impacts in El Portal. The hydrologic processes ORV in the El Portal segment is related to the continuous rapids in that segment. This ORV is not readily affected by the definition of the river corridor boundary, the zoning designations, or visitor use.

The boundary for the El Portal segment of the river in Alternative 3 would be based on a quarter-mile boundary. The zoning under this alternative calls for low-intensity zoning (Discovery [2B], 323 acres) for the majority of the area south of the river and for higher development zoning (Park Operations and Administration [3C], 399 acres) in the vicinity of existing development areas and on other potentially developable sites. Approximately 131 acres within this boundary are zoned for Day Use (2C). It is recognized that even in those areas zoned for Park Operations and Administration (3C), ORVs within these areas must still be protected through site-specific design measures.

The proposed boundary and zoning designations for the El Portal segment would likely result in additional development or redevelopment within the areas zoned 3C. This could result in a loss of vegetation, soil compaction, and/or paving, with the potential for increased erosion and increased runoff from developed areas and local, long-term, minor, adverse effects on hydrology and water quality. In addition, some development could occur within the floodplain, resulting in a local, long-term, minor, adverse effect on floodplain values. These minor adverse effects would be minimized through careful site design; Best Management Practices to limit vegetation loss, soil compaction, and erosion; and implementation of appropriate stormwater treatment measures.

Implementation of the VERP program within this segment would include monitoring of various indicators for each zone. Management actions to address exceeded standards would differ in the two zones because areas zoned Discovery (2B) are designated for lower use levels and areas zoned Park Operations and Administration (3C) are designated for higher intensity use. Management actions to address noncompliance with established standards could include educational efforts for employees and visitors, restrictions on uses within the river, closure and restoration of areas, or construction of improvements such as boardwalks, day-use facilities, or stormwater treatment systems.

The effects of management actions would vary by the action taken. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures are expected to result in local, short- and long-term, minor, benefits to hydrology and water quality. Closure and restoration of riparian areas is expected to result in local, long-term, minor to moderate, benefits to hydrology and water quality. Site hardening would be considered in areas zoned 3C only. Site hardening could have local, short-term, adverse effects related to soil disturbance, soil compaction, and erosion and sedimentation associated with construction activities. However, site hardening is expected to reduce the unofficial use of areas designated for less-intensive use. Therefore, the long-term effects associated with site improvements is expected to be local, minor, and beneficial. Effects on floodplains would primarily be related to construction activities within the floodplain. Since these activities would be expected to comply with floodplain requirements, effects on floodplains and the ability to accommodate flood flow is expected to be adverse but negligible.

Alternative 3 would be expected to have local, long-term, minor beneficial impacts on hydrology and water quality and a negligible impact on floodplains and the hydrologic processes ORV in the El Portal segment.

Impacts in Wawona. The impoundment near Wawona is described as having excellent water quality, which is a hydrologic processes ORV. The Wawona segments themselves do not represent a hydrologic processes ORV, but the Below Wawona segment includes the free-flowing condition of the river and continual whitewater cascades, which are ORVs. The water quality element of the Impoundment segment is the most susceptible to user-related impacts.

Typical management actions that might be taken under VERP have been described above. In general, the less restrictive measures would have short- and long-term, negligible to minor, beneficial impacts. More restrictive measures are expected to result in long-term, minor to moderate benefits. Management actions that include construction could have local, short-term, minor adverse effects on hydrology and water quality and long-term, negligible, adverse effects on floodplains. These activities would be designed to reduce effects on sensitive areas within the segment, and thus would be expected to have long-term, minor, beneficial effects.

The implementation of a daily segment limits for the Wawona segments is expected to provide an incremental level of protection for the hydrologic processes ORV when used in conjunction with VERP. Segment limits for this area would likely only be implemented in the summer during periods of peak use (typically weekends and around holidays), thus limiting the number of visitors who can stop and enjoy the river during these periods. Therefore, implementing VERP and the resulting management actions, in conjunction with daily segment limits, is expected to have local, long-term, minor, beneficial impacts on hydrology and water quality and a negligible impact on floodplains and the related hydrologic processes ORV for the Wawona segments.

Overall, Alternative 3 is expected to have local, long-term, negligible to moderate benefits on hydrology, water quality, and the Impoundment and Below Wawona segments' hydrologic processes ORV. Adverse effects to floodplains from any construction activities would be local, long term, and negligible.

Summary of Alternative 3 Impacts. Overall, implementation of the VERP program, based on the management zoning developed in the Merced River Plan (NPS 2000c), and daily segment limits would result in a long-term, minor, beneficial impact on hydrology, water quality, and hydrologic processes within the river corridor and a long-term, negligible, adverse effect on floodplains. The above, coupled with existing park management policies and elements of the existing Merced River Plan, would help to ensure that all elements of the hydrologic processes ORV continue to be protected and enhanced on a segment-by-segment basis within the Merced River corridor.

Cumulative Impacts

Cumulative effects to hydrology, floodplains, and water quality were described under Alternative 1.

Overall, past, present, and reasonably foreseeable cumulative actions, in combination with Alternative 3, could have a long-term, minor, beneficial effect on hydrology, floodplains, and water quality in the Merced River corridor.

Impairment

Alternative 3 would provide long-term, minor, beneficial impacts to water quality, floodplain values, and hydrologic processes in the Merced River corridor. As a result, Alternative 3 would not impair the hydrologic resources of the park for future generations.

Wetlands

Analysis

The following discussion provides an overview of the types of impacts on wetland resources and the biological ORVs that could occur within each segment of the Merced River corridor under Alternative 3.

Under Alternative 3, establishment of segment-based limits would allow park management to take actions to reduce visitor levels within each river corridor segment if limits for a segment were exceeded, regardless of whether specific visitor-related impacts had been identified. This alternative would also provide an annual maximum limit on park visitation. A user capacity program based on an annual maximum limit and daily segment limits would provide a mechanism for limiting the number of visitors by segment if limits were exceeded.

As with Alternative 2, VERP monitoring would provide data on the condition of wetland resources, allowing for other management actions as needed to ensure that VERP standards would not be exceeded. For example, monitoring might show that wetlands are being negatively affected by visitor use. Under the VERP management and monitoring program, specific management actions would be prescribed to address such visitor-related impacts. Measures such as visitor education or site hardening could allow for greater visitor access to an area with less adverse effect on protected resources.

Additionally, visitor levels could be reduced below the daily segment limits and annual maximum, depending on VERP monitoring results. Compared to Alternative 1, the establishment of daily segment limits, an annual maximum visitor limit, and VERP monitoring under Alternative 3 could result in local, long-term, minor to moderate, beneficial effects on wetland resources.

Management actions associated with the redirection of visitors from wetlands and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Under Alternative 3, user capacity in the Wilderness segments of Yosemite National Park would be managed through an annual maximum limit on park visitation. In addition, the application of daily segment limits would result in the continued implementation of the trailhead quota system, which would limit use to existing levels. Maintaining existing user levels would have a minor, beneficial effect on wetlands and the biological ORVs in the Wilderness segments compared to Alternative 1. Under Alternative 3, additional day-use limits would be implemented in Little Yosemite Valley, also resulting in a local, long-term, minor, beneficial effect on wetlands in this specific wilderness area.

Compared to Alternative 1, implementation of the VERP program in wilderness areas would provide additional resource-specific monitoring data on the condition of wetlands and visitor experience that would inform future management decisions.

Management actions implemented in response to VERP monitoring for the indicators described in Chapter II could include educating visitors, closing trails and restoring vegetation, or temporarily or permanently closing degraded or sensitive areas for restoration or conservation. In addition, the number of people could be limited by reducing wilderness trailhead quotas or enacting seasonal restrictions on access to portions of the river corridor.

The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken. Low-intensity management responses, such as educational efforts, would likely result in local, long-term, negligible to minor, beneficial effects on wetland resources. Higher intensity management responses, such as temporarily or permanently closing highly degraded or sensitive areas, are expected to result in local, long-term, minor, beneficial effects on wilderness wetlands and the biological ORVs for the Wilderness segments of the Merced River.

Under Alternative 3, the application of an annual maximum limit on park visitation user capacity limits by segment, and the VERP program within Wilderness segments, would have an overall long-term, minor, beneficial effect on wetlands and the biological ORVs in wilderness areas compared to Alternative 1.

Impacts in Yosemite Valley. Under Alternative 3, user capacity in Yosemite Valley would be addressed through the establishment of an annual maximum limit on park visitation and user capacity daily segment limits specific to the Valley segment of the river corridor. Management actions would be aimed at reducing the number of park users if the Valley daily segment limits were exceeded. Potential management actions to reduce the number of people in the Valley are described in Chapter II. Limits for all river corridor segments would be based closely on existing use. Therefore, implementation of daily segment limits that maintain existing levels of use for the Valley is expected to have a beneficial effect on wetland and the biological ORVs compared to the No Action Alternative.

The VERP program would provide resource-specific data on the condition of resources and visitor experience in the Valley segment that would inform future management decisions. VERP indicators have been selected to provide overall information on the health of resources throughout the river corridor and are described in Chapter II. Management actions implemented in response to VERP monitoring could include educating visitors on the effects of riverbank erosion and social trails on riparian wetlands, closing and restoring wetlands along social trails, or temporarily or permanently closing degraded or sensitive areas for restoration or conservation. In addition, the number of people could be limited by establishing entrance station limits or enacting seasonal restrictions on access to portions of the river corridor.

The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken. Impacts on wetland resources in the Valley segment would be local, long term, minor to moderate, and beneficial. Alternative 3 would have an overall long-term, minor to moderate, beneficial effect on wetlands and the biological ORVs in the Valley compared to Alternative 1.

Impacts in the Gorge. Under Alternative 3, user capacity in the Gorge segment would be addressed through the establishment of an annual maximum limit on park visitation and user capacity daily segment limits specific to that segment of the river corridor. Management actions would be aimed at reducing the number of park users if the parkwide limits or a Gorge daily segment limit were exceeded. Potential management actions to reduce the number of people in the Gorge segment include eliminating formal and informal parking areas and requiring permits or reservations for picnic areas. Limits for all river corridor segments would be based closely on existing use. Therefore, implementation of daily segment limits that maintain existing levels of use for the Gorge segment is expected to have a negligible, beneficial effect on wetlands and the biological ORVs compared to the No Action Alternative, which is expected to result in use increases throughout the park.

The implementation of VERP monitoring in the Gorge segment would provide data on the condition of resources that would guide future management decisions. The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken and could range from negligible to minor, beneficial effects on wetland resources for the Gorge segment. Alternative 3 would have an overall long-term, minor, beneficial effect on wetlands and the biological ORVs in the Gorge segment when compared to Alternative 1.

Impacts in El Portal. Under Alternative 3, user capacity in the El Portal segment of the river corridor would be addressed through an annual maximum limit on park visitation and a user capacity limit specific to the El Portal segment of the river corridor. Management actions would be aimed at reducing the number of park users if the annual limit or El Portal daily segment limits were exceeded. Potential management actions to reduce the number of people in the El Portal segment include eliminating formal and informal parking areas and establishing additional rafting/kayaking or fishing restrictions. Limits for the El Portal segment would allow for an increase of employees and other residents over existing levels. Therefore, implementation of daily segment limits, with a concomitant increase in the development of housing in the area, is expected to have an adverse effect on wetland and the biological ORVs compared to the No Action Alternative.

Alternative 3 would expand the El Portal boundary to a quarter mile on both the north and south sides of the river, as measured from the riverbanks. With this boundary, 853 acres would be included within the river corridor in El Portal. Compared to Alternative 1, the area within the river corridor boundary under Alternative 3 would be over four times greater. Under this alternative, El Portal would have a base zone of 2B on the south side of the river; the large, previously developed tracts primarily located north of the river, zoned 3C and several more sensitive areas both north and south of the river would be zoned 2C. Restrictions in zones 2B and 2C preclude most types of new development (e.g., campgrounds and lodging, new roads) that would have the potential to adversely affect native wetlands. Portions of El Portal zoned 3C (e.g., the Trailer Village, Old El Portal) would allow redevelopment as well as additional development (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Potential development could have both short-term (e.g., construction-related) and long-term (e.g., fire suppression in the vicinity of structures), minor to moderate, adverse effects on native wetlands. Although application of mitigation measures described in Appendix B would reduce impacts, long-term, minor to moderate, adverse effects to wetlands (e.g., conversion of wetland habitat to developed facilities) would remain. Zoning within the revised El Portal river corridor boundary would allow for park administrative uses (3C) on 399 acres (46% of the total); day-use facilities and uses would be allowed on 131 acres, and 323 acres would be zoned for low-intensity uses (zone 2B, Discovery). Under Alternative 3, all ORVs would be protected regardless of the zoning designation or whether or not they occur within or outside of the river corridor boundary. Overall, since a larger are is included within the corridor boundary and zoned, there is less potential for development in El Portal under this alternative than under Alternative 1, resulting in a minor benefit to wetlands compared to Alternative 1.

The implementation of VERP monitoring in El Portal would result in data that would guide future management decisions regarding the wetland resources in this segment. The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken and would result in minor to moderate, beneficial effects on wetland and the biological ORVs for the El Portal segment.

Local, short- and long-term, moderate, adverse effects to wetlands could occur as the result of future actions that could be implemented under the proposed zoning (e.g., new employee housing, road repair). However, adverse effects would be reduced in intensity under Alternative 3 through the application of zoning within the larger, revised river corridor boundary (as compared to Alternative 1). The revised boundary would require the application of the Merced River Plan management elements (as described under the Alternative 1 analysis) to a larger area and the implementation of the VERP program within the El Portal segment.

The revised El Portal river corridor boundary under Alternative 3 is expected to have a local, long-term, minor, beneficial effect on wetland resources in the El Portal segment compared to Alternative 1, as the corridor area would be increased. Alternative 3 would therefore have an overall local, long-term, minor, beneficial effect on wetlands and the biological ORVs in the El Portal segment compared to Alternative 1.

Impacts in Wawona. Under Alternative 3, user capacity in the Wawona segments would be addressed through the establishment of an annual maximum limit on park visitation and a user capacity limit specific to that segment of the river corridor. Management actions would be aimed at reducing the number of park users if the limit for the Wawona segments were exceeded. Potential management actions to reduce the number of people in the Wawona segments are described in Chapter II. Segment limits would be based closely on existing use. Therefore, implementation of daily segment limits that maintain existing levels of use for the Wawona segments is expected to have a beneficial effect on wetlands and the biological ORVs compared to the No Action Alternative.

Data obtained through VERP monitoring in the Wawona segment would guide future management decisions regarding wetland resources as well as visitor experience in this segment. The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken. Low-intensity management responses would likely result in local, long-term, minor, beneficial effects on wetland resources. Higher intensity management responses are expected to result in local, long-term, moderate, beneficial effects on wetland resources in the Wawona segments. Overall, Alternative 3 would have a long-term, minor to moderate, beneficial impact on wetlands and the biological ORVs in the Wawona segments.

Summary of Alternative 3 Impacts. Implementation of an annual maximum limit on park visitation, would likely result in long-term beneficial effects on wetland resources compared to Alternative

1. Implementation of daily segment limits would generally maintain existing user levels, with the exception of the El Portal segment, where an increase of employees and other residents would be allowed. Therefore, daily segment limits are expected to have a beneficial effect on wetlands in all areas of the corridor including El Portal, where an increase in the area included within the boundary would reduce the potential for future development compared to the No Action Alternative.

The implementation of VERP would inform management planning and drive the implementation of management actions designed to protect wetland resources, thus resulting in beneficial effects. The revised El Portal river corridor boundary would allow for the application of these management elements to a much greater area than that described in Alternative 1. Overall, Alternative 3 would have local, short- and long-term, minor to moderate, beneficial effects on wetlands and the biological ORVs. In addition, compliance with existing park policies would help ensure that the biological ORVs related to wetlands are protected and enhanced.

Cumulative Impacts

Cumulative effects on wetlands would be the same as described for Alternative 1. Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor beneficial effect on wetlands and wetland-related ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 3 could have a net local, long-term, minor, beneficial effect on parkwide wetlands and the biological ORVs of the Merced River corridor.

Impairment

Alternative 3 would have a local, long-term, minor to moderate, beneficial effect on parkwide wetlands and biological ORVs of the Merced River corridor and therefore would not impair wetland resources for future generations.

Vegetation

Analysis

The following discussion provides an overview of the types of impacts on vegetation resources and the biological ORVs that could occur within each segment of the Merced River corridor under Alternative 3.

Under Alternative 3, establishment of segment-based limits would allow park management to take actions to reduce visitor levels within river corridor segments if the limits were exceeded, regardless of whether specific visitor-related impacts had been identified. This alternative would also provide an annual maximum limit on park visitation. A user capacity program based on an annual maximum limit and daily segment limits would provide a mechanism for limiting visitor numbers by segment if the limits were exceeded.

As with Alternative 2, VERP monitoring would provide data on the condition of resources, allowing for other management actions as needed to ensure that VERP standards would not be exceeded. For example, monitoring might show that vegetation is being negatively affected by visitor use. Under the VERP program with daily segment limits, specific management actions would be prescribed to address such visitor-related impacts. Measures such as visitor education or site hardening could allow for greater visitor access to an area with less adverse effect on protected resources. Additionally, visitor levels could be reduced below the daily segment limits or annual maximum, depending on VERP monitoring results. Compared to Alternative 1, the establishment of daily segment limits, an annual maximum visitor limit, and the VERP program under Alternative 3 could result in local, long-term minor to moderate, beneficial effects on vegetation resources.

Management actions associated with the redirection of visitors from areas with sensitive vegetation and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Under Alternative 3, user capacity in the Wilderness segments of the river corridor would be managed through an annual maximum limit on park visitation. In addition, daily segment limits would result in the continued use of the trailhead quota system, which would limit use to current levels. Maintaining existing user levels would have a minor, beneficial effect on vegetation and the biological ORVs in the Wilderness segments compared to Alternative 1. Implementation of the VERP program with daily segment limits in wilderness areas would provide resource-specific data to inform future management decisions.

Management actions in response to VERP monitoring for the indicators described in Chapter II (see table II-5) could range from closing trails and restoring vegetation to temporarily or permanently closing highly degraded or sensitive areas for restoration or conservation. Visitor levels could be limited by reducing trailhead quotas or enacting seasonal restrictions on access to portions of the river corridor.

The impacts of management actions as a result of VERP monitoring would vary depending on the type of action taken. Low-intensity management responses, such as visitor education, would likely result in local, long-term, negligible to minor, beneficial effects on vegetation resources. Higher intensity management responses, such as temporarily or permanently closing highly degraded or sensitive areas, are expected to result in local, long-term, minor, beneficial effects on wilderness vegetation and the biological ORVs for the Wilderness segments of the Merced River.

Under Alternative 3, an annual maximum limit on visitors to the park, user capacity limits by segment, and the VERP program would have an overall long-term, minor, beneficial effect on native vegetation and the biological ORVs in the Wilderness segments compared to Alternative 1.

Impacts in Yosemite Valley. Under Alternative 3, user capacity in Yosemite Valley would be addressed through the establishment of an annual maximum limit on park visitation and a user capacity limit specific to the Valley segment of the river corridor. Management actions would be aimed at reducing the number of park users if the Valley daily segment limit were exceeded. Limits recommended for all river corridor segments would be based closely on existing use. Therefore, daily segment limits that maintain existing use levels for the Valley are expected to have a beneficial effect on vegetation and the biological ORVs compared to the No Action Alternative.

Implementation of the VERP program with daily segment limits would provide resource-specific data that would inform future management decisions. VERP indicators have been established to provide overall information on the health of resources throughout the river corridor (see table II-5). Management actions implemented in response to VERP monitoring could range from educating visitors on the effects of social trails on riparian vegetation to closing and restoring vegetation on social trails. In addition, visitor levels could be limited by establishing entrance station limits or enacting seasonal restrictions on access to portions of the river corridor.

The impacts of management actions implemented as a result of VERP monitoring would vary depending on the type of action taken. Impacts on vegetation resources in the Valley segment would be local, long term, minor to moderate, and beneficial. Alternative 3 would have an overall long-term, minor to moderate, beneficial effect on native vegetation and the biological ORVs in the Valley segment of the river corridor compared to Alternative 1.

Impacts in the Gorge. Under Alternative 3, user capacity in the Gorge segment would be addressed through the establishment of an annual maximum limit on park visitation and a user capacity limit specific to that segment of the river corridor. Management actions would be aimed at reducing user levels if the parkwide limits or daily segment limit were exceeded. Potential management actions to reduce the number of visitors in the Gorge segment include eliminating formal and informal parking areas and requiring permits or reservations for picnic areas. Recommended daily segment limits would be based closely on existing use. Therefore, implementation of daily segment limits that maintain existing levels of use in the Gorge segment would likely have a negligible, beneficial effect on vegetation and the biological ORVs compared to the No Action Alternative.

Implementation of VERP monitoring in the Gorge segment would provide data on the condition of resources that would guide future management decisions. The impacts of management actions as a result of VERP monitoring would vary depending on the type of action taken and would likely be negligible to minor, beneficial effects on vegetation and the biological ORVs. Alternative 3 would have an overall long-term, minor, beneficial effect on native vegetation and the biological ORVs in the Gorge segment compared to Alternative 1.

Impacts in El Portal. Under Alternative 3, user capacity in the El Portal segment of the river corridor would be addressed through the establishment of an annual maximum limit on park visitation and a daily segment limit specific to El Portal. Monitoring would result in specific management actions aimed at reducing the number of park users if the annual limit or El Portal daily segment limit were exceeded. Potential management actions to reduce the number of people in the El Portal segment include eliminating formal and informal parking areas and establishing additional rafting, kayaking, or fishing restrictions. Segment limits for El Portal would allow an increase of employees and other residents over existing levels. Therefore, implementation of daily segment limits, with a concomitant increase in the development of housing in the area, is expected to have an adverse effect on vegetation and the biological ORVs compared to the No Action Alternative.

Alternative 3 would expand the El Portal boundary to a quarter mile on either side of the river, as measured from the riverbanks on both the north and south sides. With this boundary, 853 acres would be included within the river corridor in El Portal. Compared to Alternative 1, the area within the river corridor boundary under Alternative 3 would be over four times greater. Under this alternative, El Portal would have a base zone of 2B on the south side of the river; the large, previously developed tracts primarily located north of the river would be zoned 3C; and several more sensitive areas both north and south of the river would be zoned 2C. Restrictions in zones

2B and 2C preclude most types of new development (e.g., campgrounds and lodging or new roads) that would have the potential to adversely affect native vegetation. Redevelopment as well as additional development would be allowed in portions of El Portal zoned 3C. Potential development could have both short-term (e.g., construction-related) and long-term (e.g., fire suppression in the vicinity of structures), minor to moderate, adverse effects on native vegetation. Although mitigation measures would reduce impacts, long-term, minor to moderate, adverse effects to native vegetation (e.g., conversion of habitat to developed facilities) would remain. Zoning within the revised El Portal river corridor boundary would allow for park administrative uses (zone 3C) on 399 acres (46% of the total area); day-use facilities and uses would be allowed on 131 acres; and 323 acres would be zoned for low-intensity uses (zone 2B). Overall, since a larger are is included within the corridor boundary and zoned, there is less potential for development in El Portal under this alternative than under Alternative 1, resulting in a minor benefit to native vegetation compared to Alternative 1.

Under Alternative 3, all ORVs would be protected regardless of the zoning or whether or not they occur within or outside of the river corridor boundary. In addition, VERP monitoring in El Portal would result in data that would guide future management decisions regarding the vegetative resources in this segment. Management actions based on the VERP program with daily segment limits would vary depending on the type of action taken and would result in minor to moderate, beneficial effects on vegetation and the biological ORVs in the El Portal segment.

Local, short- and long-term, moderate, adverse effects to native vegetation could occur as the result of future actions that could be implemented under the proposed zoning (e.g., new employee housing, road repair). However, adverse effects would be reduced in intensity under Alternative 3 through the application of zoning within the larger, revised river corridor boundary (as compared to Alternative 1). This would require application of the Merced River Plan management elements (as described under the Alternative 1 analysis) to a larger area and the implementation of the VERP program within the El Portal segment.

With an increased area included within the river corridor boundary, the revised El Portal boundary under Alternative 3 is expected to have a local, long-term, minor, beneficial effect on vegetation resources in the El Portal segment compared to Alternative 1. Alternative 3 would therefore have an overall local, long-term, minor, beneficial effect on native vegetation and the biological ORVs in the El Portal segment compared to Alternative 1.

Impacts in Wawona. Under Alternative 3, user capacity in the Wawona segments of the river corridor would be addressed through the establishment of an annual maximum limit on park visitation and a daily segment limit. Management actions based on monitoring would be aimed at reducing the number of park users if the Wawona limits were exceeded. Potential management actions to reduce visitor levels in the Wawona segments are described in Chapter II. Limits would be based closely on existing use. Therefore, daily segment limits that maintain existing levels of use for the Wawona segments are expected to have a beneficial effect on vegetation and the biological ORVs compared to the No Action Alternative.

Data obtained through VERP monitoring in the Wawona segments would guide future management decisions regarding vegetation resources. The impacts of management actions implemented as a result of the VERP program with daily segment limits would vary depending on the type of action taken. Low-intensity management responses would likely result in local, long-term, minor, beneficial effects on vegetation resources. Higher intensity management responses are expected to result in local, long-term, moderate, beneficial effects on vegetative resources in the Wawona segments. Overall, Alternative 3 would have a long-term, minor to moderate, beneficial impact on native vegetation and the biological ORVs in the Wawona segments.

Summary of Alternative 3 Impacts. Implementation of an annual maximum limit on park visitation, would likely result in long-term, beneficial effects on vegetation resources compared to Alternative 1. Implementation of daily segment limits would generally maintain existing user levels, with the exception of the El Portal segment, where an increase of employees and other residents would be allowed. Therefore, daily segment limits are expected to have a beneficial effect on vegetation in all areas of the corridor including El Portal, where an increase in the area included in the corridor boundary would result in a beneficial effect on vegetation and the biological ORVs compared to the No Action Alternative.

The implementation of VERP monitoring would inform management planning and drive management actions designed to protect vegetation resources, thus resulting in beneficial effects. The revised El Portal river corridor boundary would allow for the application of management elements to a much greater area than that described for Alternative 1. Overall, Alternative 3 would have local, short- and long-term, minor to moderate, beneficial effects on vegetation and the biological ORVs. Compliance with existing park policies would help ensure that the biological ORVs related to vegetation are protected and enhanced.

Cumulative Impacts

Cumulative effects to vegetation under Alternative 3 would be the same as those described for Alternative 1. Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on vegetation and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 3, could have a net local, long-term, minor, beneficial effect on parkwide vegetation and the biological ORVs of the Merced River corridor.

Impairment

Alternative 3 would have a local, long-term, minor to moderate, beneficial effect on parkwide vegetation as well as the biological ORVs of the Merced River corridor and therefore would not impair vegetation resources for future generations.

Wildlife

Analysis

The following discussion provides an overview of the types of impacts to wildlife resources and the biological ORVs that could occur within each segment of the Merced River corridor under Alternative 3. Under Alternative 3, daily segment limits would limit the number of park visitors in each segment to approximately existing levels. In the short term, visitor numbers are expected to be similar to those under Alternative 1. However, in the long term, visitor numbers under Alternative 3 would likely be lower than under Alternative 1 due to VERP monitoring and management actions that could limit the number of park visitors in each segment to approximately existing levels and ensure that the daily segment limits are not exceeded. Although the annual maximum limit on park visitation under Alternative 3 would be somewhat higher than current annual visitation, it is likely to be lower than the long-term increases expected under Alternative 1, resulting in beneficial impacts to wildlife.

Short-term, adverse effects to wildlife could occur under Alternative 3 through implementation of daily segment limits that would allow for some growth in employee housing in El Portal and Wawona. However, long-term, beneficial impacts to wildlife would occur through implementation of daily segment limits and VERP management actions to maintain visitor activities and use in the park at a level that would protect wildlife resources and the biological ORVs.

Management actions associated with the redirection of visitors from areas with sensitive wildlife habitat and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Under Alternative 3, user capacity within the Wilderness segments of the Merced River would continue to be addressed through trailhead quotas and the monitoring of resource conditions. Maintenance of existing user levels through daily segment limits is expected to have a negligible, beneficial effect on wildlife and the biological ORVs in the Wilderness segments compared to Alternative 1. Under this alternative, park management would have the capacity to reduce limits as needed. The reduction of limits in response to VERP monitoring is expected to result in local, short- and long-term, minor, beneficial effects on wildlife resources. Alternative 3 would also include the VERP program, resulting in additional resource-specific monitoring of wildlife indicators within the Wilderness segments of the park and subsequent management actions. VERP indicators to be monitored in Wilderness segments of the Merced River are discussed in Chapter II (see table II-5).

Existing limits based on resource protection goals currently restrict the number of day users on both established trails and cross-country routes in wilderness areas to prevent degradation of high-elevation meadows and impacts to associated wildlife species. Under Alternative 3, additional day-use limits would be implemented in Little Yosemite Valley, resulting in a local, short- and long-term, negligible to minor, beneficial effect on wildlife.

Impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions such as visitor education would be expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, negligible, beneficial impact. Increased law enforcement, reduced wilderness trailhead quotas, and closure of areas would likely result in local, short- and long-term, negligible to moderate, beneficial impacts to wildlife resources by reducing trampling, erosion, social trails, human disturbance to wildlife, and human/wildlife conflicts.

Due to the seasonal nature of visitation to the Wilderness segments of the river corridor coupled with the limited number of visitors allowed into the river corridor in these areas as a result of the trailhead quota system, implementation of the VERP program with user limits by segment and subsequent management actions would likely have overall local, short- and long-term, minor, beneficial impacts to wildlife resources and the biological ORVs in wilderness areas.

Impacts in Yosemite Valley. As described above, Alternative 3 would include implementation of the VERP program as well as segment user capacity limits that would limit the number of river users in each segment of the river corridor in Yosemite Valley to near existing use levels. The user capacity program would result in additional resource-specific monitoring of indicators within Yosemite Valley. Wildlife-related VERP indicators to be monitored in the Yosemite Valley segment are discussed in Chapter II.

Implementation of VERP monitoring in the Valley would result in data on the condition of wildlife resources that would guide future wildlife management and visitor experience decisions. Monitoring of a user capacity limit specific to the Valley segment of the river corridor would result in specific management actions aimed at reducing the number of park users if the Valley daily segment limit were exceeded. Potential management actions to reduce the number of people in the Valley segment include reducing the number of commercial bus permits issued; reducing the number of YARTS buses; turning people away at the entrance stations when limits are reached; or instituting a day-use reservation system. Limits for all river corridor segments would be based closely on existing use and would prevent the increased visitor-use effects to wildlife that are expected under Alternative 1 based on the projected increase in visitor demand. Therefore, implementation of daily segment limits that maintain existing use levels for the Valley is expected to have a local, moderate, beneficial effect on wildlife and the biological ORVs compared to the No Action Alternative.

Impacts of the management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions such as visitor education are expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife and human/wildlife conflicts, resulting in a local, short- and long-term, minor, beneficial impact. Increased ranger patrols, increased enforcement of food storage restrictions, and closure of areas would likely result in local, short- and long-term, moderate, beneficial impacts to wildlife resources by reducing trampling, erosion, social trails, human disturbance to wildlife, and human/wildlife conflicts.

Alternative 3 would include daily segment limits set close to existing use levels for each segment and implementation of VERP monitoring and management actions, which would prevent visitor impacts from adversely affecting ORVs. Overall, Alternative 3 provides protection for native wildlife and the biological ORVs in Yosemite Valley and would result in a net local, short- and long-term, moderate, beneficial effect.

Impacts in the Gorge. Under Alternative 3, user capacity in the Gorge segment would be addressed through establishment of a user capacity limit specific to the Gorge segment of the river corridor and set close to existing use levels. VERP monitoring would provide data on the condition of wildlife resources that would guide future management decisions. VERP management actions would be aimed at reducing the number of park users if the Gorge daily segment limit were exceeded. Potential management actions to reduce the number of people in the Gorge segment include eliminating formal and informal parking areas and requiring permits or reservations for picnic areas. Limits for all river corridor segments would be based closely on existing use and would prevent the increased visitor-use effects to wildlife that are expected under Alternative 1 based on the projected increase in visitor demand. Therefore, daily segment limits that maintain existing use levels for the Gorge segment are expected to have a local, minor to moderate, beneficial effect on wildlife and the biological ORVs compared to the No Action Alternative.

Impacts of the management actions implemented as a result of VERP monitoring with user limits by segment would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions such as visitor education are expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, minor, beneficial impact. Implementation of a permit reservation system for picnic areas, increased enforcement of food storage restrictions, and closure of areas would likely result in local, short- and long-term, minor to moderate, beneficial impacts to wildlife resources by reducing trampling, erosion, social trails, human disturbance to wildlife, and human/wildlife conflicts.

Alternative 3 would implement daily segment limits set close to existing use levels as well as the VERP program, which would prevent visitor impacts from adversely affecting ORVs. Overall, Alternative 3 would have a local, short- and long-term, minor to moderate, beneficial effect on native wildlife and the biological ORVs within the Gorge segment.

Impacts in El Portal. Under Alternative 3, the river corridor boundary within El Portal would include habitat within a quarter-mile of the Merced River. The boundary includes the biological ORVs (e.g., Crane Creek and other tributaries to the Merced River and associated riverine habitats, habitat south of the Merced River) within the El Portal Administrative Site. Alternative 3 would designate low-intensity zoning (2B) for the majority of the area south of the river and higher intensity zoning (3C) in the vicinity of existing development areas and on other potentially developable sites. In addition, Alternative 3 would also designate several areas north of the river, such as Crane Creek and habitat to the east, as lower intensity zoning (2C).

Examples of how management zoning would affect native wildlife and the biological ORVs of El Portal are described below.

- The Sand Pit in El Portal was once used to mine sand from the Merced River. Under its 2C zoning, the Sand Pit could be restored, which would allow natural processes to prevail at this location, enhance the aquatic habitat, and allow natural revegetation with riparian species, thus resulting in a local, minor to moderate, beneficial effect on this ORV.
- Large portions of El Portal would be zoned 3C (e.g., the Trailer Village, Old El Portal), which could allow additional development or redevelopment (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Potential development or redevelopment could have both short-term (e.g., construction-related) and long-term (e.g., night lighting, human presence, fire suppression in the vicinity of structures), minor to major, adverse effects on native wildlife. Although application of mitigation measures described in Appendix B would reduce impacts, long-term, minor to moderate, adverse effects to wildlife (e.g., conversion of upland woodland or scrub vegetation to developed facilities) would remain.
- The revised boundary would increase the area included in the river corridor from 193 acres to 853 acres. Although 399 acres of habitat would be zoned 3C, allowing development of park operations and administration facilities, this development would be primarily concentrated in the vicinity of existing development. Designation of 454 acres of habitat zoned 2B and 2C (encompassing the biological ORVs south of the river and in some areas supporting wildlife

resources north of the river) would limit the development intensity in these regions resulting in, a local, long-term, minor to moderate, beneficial effect on wildlife resources and the biological ORVs.

Under Alternative 3, user capacity in the in the El Portal segment of the river corridor would be addressed through the establishment of a user capacity limit specific to the El Portal segment and set close to the existing use levels. The addition of the VERP program would result in data on the condition of wildlife resources that would guide future management decisions in El Portal. VERP management actions would be aimed at reducing the number of park users if the El Portal limits were exceeded. Potential management actions to reduce the number of people in the El Portal segment include eliminating formal/informal parking areas or establishing additional rafting, kayaking, or fishing restrictions. Limits for the El Portal segment would be based closely on existing use, with some growth in employee housing if VERP monitoring indicates that wildlife resources or the biological ORVs would not be adversely affected. Therefore, implementation of daily segment limits that maintain use near existing levels for the El Portal segment is expected to have a local, minor to moderate, beneficial effect on wildlife and the biological ORVs compared to the No Action Alternative.

The impacts of VERP monitoring and management actions coupled with daily segment limits would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions are expected to reduce impacts by limiting visitor use and changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, minor to moderate, beneficial impact.

The application of management zoning and VERP monitoring and management actions with segment user capacity limits set close to existing use levels would protect and enhance wildlife and the biological ORVs in El Portal. The zoning in El Portal, in combination with an increased employee use limit, would allow for road repair as well as additional development or redevelopment of park administration facilities and employee housing, which could have short- and long-term, adverse effects on native wildlife. The biological ORVs within a quarter-mile of the river within the El Portal Administrative Site are located within the proposed river corridor boundary (e.g., Crane Creek and other tributaries to the Merced River and some associated riverine habitats, habitat south of the Merced River); however, the criteria and considerations (including the Section 7 determination process) would protect the biological ORVs both within and outside the boundary. Overall, the application of an increased river boundary and zoning, the VERP monitoring process, daily segment limits, and resulting management actions within El Portal would have a local, short- and long-term, minor, beneficial effect on native wildlife and the biological ORVs.

Impacts in Wawona. Under Alternative 3, user capacity in the Wawona segments would be addressed through the establishment of a user capacity limit specific to that segment of the river corridor and set close to existing use levels. Monitoring would result in specific management actions aimed at reducing the number of park users if the limit for the Wawona segments were exceeded. Potential management actions to reduce the number of people in the Wawona segments include instituting a day-use reservation system and reducing the number of commercial bus permits issued. Limits recommended for the Wawona segments would be based closely on existing use, but would allow for some growth in employee housing if VERP monitoring indicates that wildlife resources or the biological ORVs would not be adversely affected. Therefore, implementation of daily segment limits that maintain use near existing levels for the Wawona segments is expected to have a local, minor, beneficial effect on wildlife and the biological ORVs compared to the No Action Alternative.

Impacts of management actions implemented as a result of VERP monitoring and the segment user capacity limits would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions are expected to reduce impacts by limiting visitor use and changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, minor, beneficial impact.

Overall, Alternative 3 would have a local, short- and long-term, minor, beneficial impact on native wildlife and the biological ORVs in the Wawona segments.

Summary of Alternative 3 Impacts. Overall, limits on facilities through management zoning in El Portal in combination with VERP monitoring and management actions would allow existing natural areas to remain relatively intact and would direct restoration and enhancement of degraded native habitats. Implementation of daily segment limits set close to existing use levels would allow park management to limit visitation to specific segments of the river corridor. Although the annual maximum limit on park visitation under Alternative 3 is somewhat higher than current annual visitation, it is likely to be lower than the long-term increases expected under Alternative 1, resulting in minor, beneficial impacts to wildlife. The revised river corridor boundary at El Portal would include the biological ORVs within a quarter-mile of the river within the El Portal Administrative Site, resulting in a beneficial effect on wildlife resources. Alternative 3 would result in a local, short- and long-term, minor to moderate, beneficial impact on native wildlife and the biological ORVs within the river corridor. Compliance with existing park policies would help ensure that the biological ORVs related to wildlife are protected and enhanced.

Cumulative Impacts

Cumulative effects to wildlife from past, present, and foreseeable future actions would be the same as those discussed for Alternative 1. Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on wildlife and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 3, could have a net local, short- and long-term, minor to moderate, beneficial effect on parkwide native wildlife and the biological ORVs of the Merced River corridor.

Impairment

Alternative 3 would have a local, short- and long-term, minor to moderate, beneficial effect on parkwide native wildlife as well as the biological ORVs of the Merced River corridor and therefore would not impair wildlife resources for future generations.

Rare, Threatened, and Endangered Species

Analysis

The following discussion provides an overview of the types of impacts to rare, threatened, and endangered species and the biological ORVs that could occur within each segment of the Merced River corridor. Under Alternative 3, daily segment limits would limit the number of park visitors in each segment to approximately existing levels. In the short term, visitor numbers under

Alternative 3 are expected to be similar to those under Alternative 1. However, in the long term, visitor numbers under Alternative 3 would likely be lower than under Alternative 1 due to VERP monitoring and management actions that could limit the number of park visitors within each segment to approximately existing levels and ensure that the daily segment limits are not exceeded. Although the annual maximum limit on park visitation under Alternative 3 would be higher than current annual visitation, it is likely to be lower than the long-term increases expected under Alternative 1, resulting in beneficial impacts to rare, threatened, and endangered species. Short-term, adverse effects to rare, threatened, and endangered species could occur under Alternative 3 through implementation of daily segment limits that would allow for some growth in employee housing in El Portal and Wawona. However, long-term, beneficial impacts to special-status species would occur with implementation of daily segment limits and VERP monitoring and management actions to maintain visitor activities and use of the park at a level that would protect special-status species and the biological ORVs.

Management actions associated with the redirection of visitors from areas with known rare, threatened and endangered species and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Under Alternative 3, user capacity within the Wilderness segments of the Merced River would continue to be addressed through trailhead quotas and the monitoring of wilderness resource conditions. Maintenance of existing user levels through daily segment limits is expected to have a negligible, beneficial effect on rare, threatened, and endangered species and the biological ORVs in the Wilderness segments compared to Alternative 1. Any reduction in the daily segment limits in response to VERP monitoring would likely result in local, short- and long-term, minor, beneficial effects on rare, threatened, and endangered species.

Existing limits based on resource protection goals currently restrict the number of day users on both established trails and cross-country routes in wilderness areas to prevent degradation of high-elevation meadows (a habitat for rare, threatened, and endangered species) and the biological ORVs. Under Alternative 3, additional day-use limits would be implemented in Little Yosemite Valley, resulting in a local, short- and long-term, negligible to minor, beneficial effect on rare, threatened, and endangered species.

The impacts of management actions implemented as a result of VERP monitoring would vary depending on the action taken. Management actions such as visitor education would likely have a local, short- and long-term, negligible, beneficial impact. Increased law enforcement, reduced wilderness trailhead quotas, and closure of areas are expected to result in local, short- and long-term, negligible to moderate, beneficial impacts to rare, threatened, and endangered species by reducing trampling, erosion, social trails, and human disturbance to wildlife.

Due to the seasonal nature of visitation to the Wilderness segments of the river corridor coupled with the limited number of visitors allowed into the river corridor in these areas as a result of the trailhead quota system, implementation of daily segment limits and VERP monitoring and management actions would likely have local, short- and long-term, minor, beneficial impacts to rare, threatened, and endangered species and the biological ORVs in wilderness areas.

Impacts in Yosemite Valley. Alternative 3 would implement daily segment limits and the VERP program, which would limit the number of river users in each segment of the river corridor in Yosemite Valley to near existing levels. The user capacity program would result in additional resource-specific monitoring of indicators within Yosemite Valley. VERP indicators to be monitored in the Yosemite Valley segment are discussed in Chapter II.

Implementation of VERP monitoring in the Valley would result in data on the condition of rare, threatened, and endangered species that would guide future resource management and visitor experience decisions. A user capacity limit specific to the Valley segment of the river corridor would result in specific management actions aimed at reducing the number of park users if the limit was exceeded. Potential management actions to reduce the number of people in the Valley segment include reducing the number of commercial bus permits issued; reducing the number of YARTS buses; turning people away at the entrance stations when limits are reached; or institution of a day-use reservation system. Limits for all river corridor segments would be based closely on existing use and would prevent increased visitor-use effects to special-status species compared to Alternative 1. Therefore, implementation of daily segment limits that maintain existing use levels for the Valley are likely to have a local, moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs compared to the No Action Alternative.

The impacts of management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on rare, threatened, and endangered species. Management actions such as visitor education would be expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local, short- and long-term, minor, beneficial impact. Increased ranger patrols, increased enforcement of trail food storage restrictions, and closure of areas would likely result in local, short- and long-term, moderate, beneficial impacts to rare, threatened, and endangered species by reducing trampling, erosion, social trails, and human disturbance to wildlife.

Alternative 3 would include daily segment limits set close to existing use levels for each segment and implementation of the VERP program, which would prevent visitor impacts from adversely affecting ORVs. Overall, Alternative 3 would provide protection for rare, threatened, and endangered species and the biological ORVs in Yosemite Valley and would result in a net local, short- and long-term, moderate, beneficial effect.

Impacts in the Gorge. Under Alternative 3, user capacity in the Gorge segment would be addressed through the establishment of a user capacity limit specific to the Gorge segment of the river corridor and set close to existing use levels. VERP monitoring would result in data on the condition of rare, threatened, and endangered species that would guide future management decisions. Management actions would be aimed at reducing the number of park users if the Gorge daily segment limits were exceeded. Potential management actions to reduce the number of people in the Gorge segment include eliminating formal and informal parking areas and requiring permits or reservations for picnic areas. Limits for all river corridor segments would be based closely on existing use and would prevent increased visitor-use effects to rare, threatened, and endangered species compared to Alternative 1. Therefore, implementation of daily segment limits that maintain existing use levels for the Gorge segment is expected to have a local, minor to moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs compared to the No Action Alternative.

The impacts of daily segment limits and VERP management actions would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on rare, threatened, and endangered species. Management actions such as visitor education would be expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local, short- and long-term, minor, beneficial impact. Implementation of a permit reservation system for picnic areas, increased enforcement of trail restrictions, and closure of areas would likely result in local, short- and long-term, minor to moderate, beneficial impacts to rare, threatened, and endangered species by reducing trampling, erosion, social trails, and human disturbance to wildlife.

Alternative 3 would implement daily segment limits and the VERP program, which would prevent visitor impacts from adversely affecting ORVs. Overall, Alternative 3 would have a local, short- and long-term, minor to moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs in the Gorge segment.

Impacts in El Portal. Under Alternative 3, the river corridor boundary in El Portal would include habitat within a quarter-mile of the Merced River. The boundary includes the ORVs within a quarter-mile of the Merced River (e.g., Crane Creek and other tributaries to the Merced River and associated riverine habitats, habitat south of the Merced River) within the El Portal Administrative Site. Alternative 3 would designate low-intensity zoning (2B) for the majority of the area south of the river and higher intensity zoning (3C) in the vicinity of existing development areas and on other potentially developable sites. In addition, Alternative 3 would also designate several areas north of the river, such as Crane Creek and habitat to the east, as lower intensity zoning (2C).

Examples of how management zoning would affect rare, threatened, and endangered species and the biological ORVs of El Portal are described below.

- The Sand Pit in El Portal was once used to mine sand from the Merced River. Under its 2C zoning, the Sand Pit could be restored, which would allow natural processes to prevail at this location, enhance the aquatic habitat, and allow natural revegetation with riparian species, thus resulting in a local, minor to moderate, beneficial effect on this ORV.
- Large portions of El Portal would be zoned 3C (e.g., the Trailer Village, Old El Portal), which could allow additional development (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Potential development could have both short-term (e.g., construction-related) and long-term (e.g., night lighting, human presence, fire suppression in the vicinity of structures), minor to major, adverse effects on rare, threatened, and endangered species. Although application of mitigation measures described in Appendix B would reduce impacts, long-term, minor to moderate, adverse effects to rare, threatened, and endangered species (e.g., conversion of upland woodland or scrub vegetation to developed facilities) would remain.
- The revised boundary would increase the area included in the river corridor from 193 acres to 853. Although 399 acres of habitat would be zoned 3C, allowing development of park operations and administration facilities, this development would be primarily concentrated in the vicinity of existing development. Designation of 454 acres of habitat zoned 2B and 2C (encompassing the majority of biological ORVs south of the river and in some areas north of the river that potentially support rare, threatened, and endangered species, such as Valley elderberry longhorn beetle, Tompkin's sedge, and Congdon's wooly sunflower) would limit

the development intensity in these regions, resulting in a local, long-term, minor to moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs.

Under Alternative 3, user capacity in the El Portal segment of the river corridor would be addressed through the establishment of a user capacity limit specific to the El Portal segment of the river corridor and set close to the existing use level. The addition of VERP would result in data on the condition of rare, threatened, and endangered species that would guide future management decisions on El Portal. Management actions aimed at reducing the number of users would be implemented if the El Portal limit was exceeded. Potential management actions to reduce the number of people in the El Portal segment include eliminating formal informal parking areas or establishing additional rafting, kayaking, or fishing restrictions. Limits for all river corridor segments would be based closely on existing use, with some growth in employee housing if VERP monitoring indicates that rare, threatened, and endangered species and the biological ORVs would not be adversely affected. Therefore, implementation of daily segment limits that maintain existing use levels for the El Portal segment is expected to have a local, minor to moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs compared to the No Action Alternative.

The effects of VERP would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on rare, threatened, and endangered species. Management actions are expected to reduce impacts by limiting visitor use and changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local, short- and long-term, minor to moderate, beneficial impact.

The application of management zoning, the VERP program, and segment user capacity limits set close to existing use levels would protect and enhance rare, threatened, and endangered species and the biological ORVs in El Portal. The zoning in El Portal, in combination with an increased employee use limit, would allow for road repair as well as additional development of park administration facilities and employee housing, which could have short- and long-term, adverse effects on rare, threatened, and endangered species. The biological ORVs within a quarter-mile of the river within the El Portal Administrative Site would be located within the river corridor boundary; however, the criteria and considerations (including the Section 7 determination process) would protect the biological ORVs inside and outside the corridor boundary. Overall, the application of an increased river boundary and management zoning in combination with the VERP program and daily segment limits in El Portal would have a local, short- and long-term, minor, beneficial effect on rare, threatened, and endangered species and the biological ORVs.

Impacts in Wawona. Under Alternative 3, user capacity in the Wawona segments would be addressed through the establishment of a user capacity limit specific to that segment of the river corridor and set close to existing use levels. Monitoring would result in specific management actions aimed at reducing the number of park users if the limit for the Wawona segments were exceeded. Potential management actions to reduce the number of people in the Wawona segments include instituting a day-use reservation system and reducing the number of commercial bus permits issued. Limits for the Wawona segments would be based closely on existing use, but would allow for some growth in employee housing if VERP monitoring indicates that rare, threatened, and endangered species and the biological ORVs would not be adversely affected. Therefore, implementation of daily segment limits that maintain existing use levels for the Wawona segments is expected to have a local, minor, beneficial effect on rare, threatened, and endangered species and the biological ORVs compared to the No Action Alternative.

The impacts of daily segment limits and VERP management actions would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts to rare, threatened, and endangered species. Management actions are expected to reduce impacts by limiting visitors use and changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local, short- and long-term, minor, beneficial impact.

Overall, Alternative 3 would have a local, short- and long-term, minor, beneficial impact on rare, threatened, and endangered species and the biological ORVs in the Wawona segments.

Summary of Alternative 3 Impacts. Overall, limits on facilities through management zoning in El Portal in combination with VERP monitoring and management actions would allow existing natural areas to remain relatively intact and would direct restoration and enhancement of degraded native habitats. Implementation of daily segment limits set close to existing use levels would allow for park management to limit visitation in specific segments of the river corridor. Although the annual maximum limit on park visitation under Alternative 3 is higher than current annual visitation, it is likely to be lower than under Alternative 1, resulting in minor, beneficial impacts to rare, threatened, and endangered species. The revised river corridor boundary at El Portal would include the biological ORVs within a quarter-mile of the river within the El Portal Administrative Site, resulting in a beneficial effect on rare, threatened, and endangered species. Alternative 3 would result in a local, short- and long-term, minor to moderate, beneficial impact on rare, threatened, and endangered species and the biological ORVs within the river corridor.

Compliance with existing park policies and federal regulations such as the Endangered Species Act would help ensure that the biological ORVs in each river segment are protected and enhanced.

Cumulative Impacts

Cumulative effects to rare, threatened, and endangered species from past, present, and foreseeable future actions would be the same as those described for Alternative 1. Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on rare, threatened, and endangered species and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 3, could have a net local, short- and long-term, minor to moderate, beneficial effect on parkwide rare, threatened, and endangered species and the biological ORVs of the Merced River corridor.

Impairment

Alternative 3 would have a local, short- and long-term, minor to moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs of the Merced River corridor and therefore would not impair these resources for future generations.

Air Quality

Analysis

The following discussion provides an overview of the types of impacts to air quality that could occur within each segment of the Merced River corridor associated with Alternative 3.

In general, under Alternative 3 air quality in the river corridor would continue to be influenced by local sources within the park and by regional sources upwind of the park, and would continue to be subject to emissions trends similar to those described under Alternative 1.

The main differences between air quality conditions under Alternative 3 and those under Alternative 1 would relate to implementation of daily segment limits; implementation of a VERP program; and the construction or demolition activities and long-term impacts on air quality that could occur as a result of the change in management zoning resulting from adoption of a revised river corridor boundary in the El Portal segment of the river.

Impacts in Wilderness. Under Alternative 3, the daily segment limits for all Wilderness segments are set at the existing trailhead quota system limits. The use of trails in wilderness areas would continue consistent with conditions under Alternative 1.

Implementation of daily segment limits and the VERP program for wilderness areas would result in additional monitoring of indicators within Wilderness segments. The effects of the VERP program under Alternative 3 would be the same as described under Alternative 2. The impacts of management actions as a result of daily segment limits and VERP monitoring would vary depending on the action. Less restrictive management actions would be expected to have no effect on air quality in wilderness areas. The most restrictive measures could have beneficial effects by reducing the number of people recreating within the river corridor, as discussed under Alternative 2. In addition, the number of people could be limited by reducing trailhead quotas based on daily segment limit monitoring. These more restrictive measures could result in fewer people in wilderness areas and could indirectly result in fewer vehicle trips (and associated vehicle-miles traveled), and a corresponding reduction in ozone precursor and particulate matter emissions in other areas of the park. On this basis, management actions resulting Alternative 3 could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Overall, Wilderness segments would continue to be largely free of effects from local emissions sources (except for prescribed fires) but would be subject to regionwide emissions trends. Implementation of daily segment limits and the VERP program, combined with appropriate management actions based on monitoring results, would likely prevent user impacts from adversely affecting ORVs. With respect to ozone and particulate matter, daily segment limits and the VERP program would be expected to have a local, long-term, negligible, beneficial impact on air quality in Wilderness segments compared to Alternative 1.

Impacts in Yosemite Valley. Under Alternative 3, air quality in Yosemite Valley would continue to be influenced by local sources within the park and by regional sources upwind of the park. The effects of local emissions sources would continue to be concentrated in the Valley. Emissions from local stationary, area, and mobile sources would follow emissions trends and continue to be regulated in a manner consistent with Alternative 1.

In the short term, user levels and associated traffic in the Valley would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, user numbers and associated vehicle use could increase, but such increases would likely be lower than under Alternative 1 because of daily segment limits and VERP.

Segment limits and the VERP program associated with Alternative 3 could have an indirect, beneficial impact on air quality in the Valley. Alternative 3 would include monitoring of daily segment limits that would most likely be exceeded only in the summer during periods of peak use (typically weekends and around holidays). If visitor numbers exceed the daily segment limits, park management would reduce visitor numbers through entrance station restrictions, day use permit requirements, or other means. Restrictions on the number of visitors in the Valley in the long term would likely result in fewer people in the Valley and could indirectly result in fewer vehicle trips (and associated vehicle-miles traveled), and a corresponding reduction in ozone precursor and particulate matter emissions.

The VERP program under Alternative 3 would be the same as described under Alternative 2. The applicable indicators would not directly address conditions specific to air quality; however, monitoring congestion on major park roads would indirectly address localized air quality in congested areas. If the standards set for level of congestion on major park roads or other standards and indicators were not met, management actions would be required to remedy the situation.

The impacts of management actions as a result of and VERP monitoring would vary depending on the action. Management actions could range from less restrictive measures such as education and site hardening, to more restrictive actions related to reducing user activities or access in certain areas. In general, management actions such as visitor education would be expected to have little or no effect on air quality. More restrictive measures could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Conversely, management actions such as site hardening, construction of new facilities, or removal of existing facilities could result in significant quantities of dust, and local visibility and PM-10 and PM-2.5 concentrations could be adversely affected. Without mitigation, dust raised by construction resulting from certain management actions could have a moderate but temporary effect in the immediate vicinity of individual sites. Implementation of Best Management Practices listed in Appendix B would reduce the temporary and localized air quality impacts from construction activities to a minor level and could result in localized, short-term, minor, adverse impacts on air quality. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas.

Overall, Alternative 3 is expected to prevent visitor use from adversely affecting ORVs in the Valley. Certain VERP management actions could result in localized short-term, minor, adverse impacts on air quality during construction activities. However, with respect to ozone and particulate matter, implementation of daily segment limits and the VERP program would likely have an overall local, long-term, negligible, beneficial impact on air quality in the Yosemite Valley segment compared to Alternative 1 because any increases in users and associated vehicle use would likely be lower.

Impacts in the Gorge. Like Alternative 1, under Alternative 3, areas zoned Untrailed (1A), Open Space and Undeveloped Open Space (2A, 2A+), and Discovery (2B) in the Gorge segment would continue to be free of effects from local emissions sources (with the exception of prescribed fires) but would be subject to regionwide emissions trends. Areas zoned Day Use (2C), Attraction (2D) and Park Operations and Administration (3C) would continue to experience a local, long-term, minor, adverse effect due to the concentration of vehicular emissions in those areas.

In the short term, visitor levels and associated vehicle use in the Gorge segment would remain approximately the same as existing levels. Over the long term, user numbers and associated vehicle use could increase, but such increases would likely be lower than under Alternative 1 due to daily segment limits and VERP management actions.

Implementation of daily segment limits and the VERP program associated with Alternative 3 could have an indirect, beneficial impact on air quality in the Gorge segment. Park management would manage the number of visitors in the Gorge segment to ensure that the daily segment limits are not exceeded. If visitor numbers exceed the limits, management would reduce visitor numbers through limiting entrance station access or reducing parking availability. Restrictions on the number of visitors in the Gorge segment in the long term would likely result in fewer people in the Gorge and could indirectly result in fewer vehicle trips (and associated vehicle-miles traveled), and a corresponding reduction in ozone precursor and particulate matter emissions.

Implementation of VERP under Alternative 3 would be the same as described under Alternative 2. The indicators would not directly address conditions specific to air quality; however, monitoring of congestion on major park roads indirectly addresses localized air quality in congested areas. If the daily segment limit or standards set for congestion levels on major park roads or other indicators were not met, management actions would be implemented to remedy the situation.

The impacts of management actions as a result of VERP monitoring would vary depending on the action. In general, management actions such as visitor education would be expected to have little or no effect on air quality. More restrictive measures could have beneficial effects by reducing the number of vehicles or buses, or the number of users recreating within the river corridor. These more restrictive measures could result in fewer people in the Gorge segment and could indirectly result in fewer vehicle trips (and associated vehicle-miles traveled) and a corresponding reduction in ozone precursor and particulate matter emissions. Therefore, management actions could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Conversely, management actions that result in site hardening, construction of new facilities, or removal of existing facilities could have local, short-term, minor, adverse impacts on air quality during construction, as discussed under the Yosemite Valley segment above. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas.

Overall, Alternative 3 is expected to prevent visitor use from adversely affecting ORVs in the Gorge segment. Certain VERP management actions could result in localized short-term, minor, adverse impacts on air quality during construction activities. However, with respect to ozone and particulate matter, daily segment limits and the VERP program would be expected to have an overall local, long-term, negligible, beneficial impact on air quality in the Gorge segment compared to Alternative 1 because any increases in visitor numbers and associated vehicle use would likely be lower.

Impacts in El Portal. Under Alternative 3, the boundary for the El Portal segment of the river corridor would be based on a quarter-mile boundary. The zoning in El Portal with this alternative would include low-intensity zoning (2B) for the majority of the area south of the river and higher development zoning (3C) in the vicinity of existing development areas and on other potentially developable sites. Several smaller areas south and north of the river would be zoned Day Use (2C). It is recognized that even in areas zoned for Park Operations and Administrative (3C) must still protect existing ORVs through site-specific design measures. Generally, development in the El Portal Administrative Site would be less flexible under Alternative 3 than under Alternative 1, where the boundary would be limited to the 100-year floodplain or River Protection Overlay, whichever is greater. The total acreage within the El Portal segment of the river corridor under Alternative 3 would be 853 acres, which would be four times greater than the boundary presented under Alternative 1.

The proposed boundary and zoning plan for the El Portal segment would likely result in some additional development or redevelopment within the areas zoned 3C and, to a lesser extent, in areas zoned 2C. Construction or redevelopment activities could result in substantial quantities of dust, and, as a result, local visibility and PM-10 and PM-2.5 concentrations could be adversely affected. Without mitigation, dust raised by construction resulting from the revised boundary in the El Portal segment could have a major but temporary effect in the immediate vicinity of individual sites. Implementation of mitigation measures would reduce the temporary and localized air quality impacts from construction activities to a minor level. On this basis, the construction associated with the management zoning under Alternative 3 could result in localized, short-term, minor, adverse impacts on air quality. However, overall, development in El Portal under Alternative 3 would be less intensive than under Alternative 1.

In the short term, user levels in El Portal would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, user numbers and associated vehicle use could increase, but such increases would likely be lower than under Alternative 1 due to daily segment limits and VERP monitoring and management.

Implementation of daily segment limits and the VERP program associated with Alternative 3 could have an indirect beneficial impact on air quality in the El Portal area. Park management would manage the number of visitors in El Portal to ensure that the daily segment limits are not exceeded. If visitor numbers exceed the limits, park management would implement measures to limit visitor use to the adopted limit. Restrictions on the number of visitors in El Portal in the long term would likely result in fewer people in El Portal and could indirectly result in fewer vehicle trips (and associated vehicle-miles traveled), and a corresponding reduction in ozone precursor and particulate matter emissions. However, since the El Portal segment includes Highway 140, a primary entrance road to the park, reductions in vehicle trips through this segment would be nominal.

Implementation of VERP under Alternative 3 would be the same as described under Alternative 2. The applicable indicators would not directly address conditions specific to air quality; however, monitoring of congestion on major park roads indirectly addresses localized air quality in congested areas. If the standards set for level of congestion on major park roads or other standards and indicators were not met, management actions would be implemented to remedy the situation.

The impacts of management actions as a result of VERP monitoring would vary depending on the action. In general, management actions such as visitor education would be expected to have little or no effect on air quality. More restrictive measures could have beneficial effects by reducing the number of vehicles and buses, or the number of people recreating within the river corridor. These more restrictive measures could result in fewer vehicle trips (and associated vehicle-miles traveled) and a corresponding reduction in ozone precursor and particulate matter emissions. Therefore, management actions could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Conversely, management actions that result in site hardening, construction of new facilities, or removal of existing facilities could have local, short-term, minor, adverse impacts on air quality during construction, as discussed under the Yosemite Valley segment above. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas.

Overall, Alternative 3 is expected to prevent visitor use from adversely affecting ORVs in the El Portal segment of the river corridor. Implementation of the quarter-mile river corridor boundary and certain VERP management actions could result in localized short-term, minor, adverse impacts on air quality during construction or redevelopment activities. However, development in El Portal under Alternative 3 would be less intensive than under Alternative 1 because the river corridor area would be increased. However, with respect to ozone and particulate matter, implementation of daily segment limits and the VERP program would be expected to have a local, long-term, negligible, beneficial impact on air quality in El Portal compared to Alternative 1 because any increases in user numbers and associated vehicle use would likely be lower.

Impacts in Wawona. Like Alternative 1, under Alternative 3 air quality in Wawona segments would continue to be influenced by local sources within the park and by regional sources upwind of the park. The effects of local emissions sources would continue to be concentrated in Wawona. Emissions from local stationary, area, and mobile sources would follow emissions trends and continue to be regulated in a manner consistent with Alternative 1.

In the short term, user levels and associated traffic in Wawona would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, user numbers and associated vehicle use could increase, but such increases would likely be lower than under Alternative 1 as a result of daily segment limits and VERP monitoring and management.

Implementation of daily segment limits and the VERP program under Alternative 3 could have an indirect, beneficial impact on air quality in Wawona. Park management would manage the number of visitors in Wawona to ensure that the daily segment limits are not exceeded. If visitor numbers exceed the limits, park management would implement measures to limit visitor use to the adopted limit. Restrictions on the number of visitors in Wawona in the long term would likely result in fewer people in Wawona and could indirectly result in fewer vehicle trips (and associated vehicle-miles traveled), and a corresponding reduction in ozone precursor and particulate matter emissions.

The VERP program under Alternative 3 would be the same as described under Alternative 2. In general, management actions such as visitor education would be expected to have little or no effect on air quality. More restrictive measures could result in fewer users, fewer vehicle trips (and associated vehicle-miles traveled), and a corresponding reduction in ozone precursor and particulate matter emissions, which could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Management actions that result in site hardening, construction of new facilities, or removal of existing facilities could have local, short-term, minor, adverse impacts on air quality during construction. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas.

Overall, Alternative 3 is expected to prevent visitor use from adversely affecting ORVs in Wawona. Certain VERP management actions could result in localized short-term, minor, adverse impacts on air quality during construction activities. However, with respect to ozone and particulate matter, implementation of daily segment limits and the VERP program would likely have a local, long-term, negligible, beneficial impact on air quality in Wawona compared to Alternative 1 because any increases in user numbers and associated vehicle use would likely be lower.

Summary of Alternative 3 Impacts. Overall, Alternative 3 is expected to prevent visitor use from adversely affecting ORVs. Certain VERP management actions in response to daily segment limits and VERP monitoring, and development that could occur as a result of the revised river corridor boundary in El Portal, could result in localized short-term, minor, adverse impacts on air quality during construction activities. However, development in El Portal under Alternative 3 would be less intensive than under Alternative 1. Overall, Alternative 3 would be expected to have a local, long-term, negligible, beneficial impact on air quality within the Merced River corridor compared to Alternative 1.

Cumulative Impacts

Cumulative effects to air quality under Alternative 3 would be the same as those identified and described under Alternative 1.

Based on the revised river corridor boundary in El Portal and VERP management actions, Alternative 3 could contribute to the cumulative number of construction sites in and near the corridor. In most instances, construction projects under Alternative 3 would not overlap in time and space with cumulative construction projects; therefore, the local, short-term, major, adverse effects on air quality due to construction activities could be reduced to a minor intensity with implementation of Best Management Practices. Over the long term, with respect to ozone, conditions in the river corridor would be determined almost entirely by regional emissions trends. The local, long-term, negligible, beneficial impact on air quality within the Merced River corridor under Alternative 3 (relative to Alternative 1) would have little effect on overall ozone levels in Yosemite National Park. As discussed under Alternative 1, the long-term, regional effect would be moderate and beneficial, primarily due to the emissions reductions expected to occur with ongoing state and federal mobile-source control programs. With respect to particulate matter, conditions in the river corridor would be determined by both regional sources and local sources, and the relative influence of these two types of sources would vary on a daily and seasonal basis. Given the opposing emissions trends between primary and secondary sources of particulate matter and the varying relative contributions of regional and local emissions sources, it would be speculative to conclude that the combined effect of cumulative actions and the benefits of Alternative 3 (compared to Alternative 1) would be beneficial or adverse; however, the opposing emissions trends would tend to diminish the magnitude of the effect, regardless of whether the effect would be beneficial or adverse.

Impairment

Management actions in response to daily segment limits and VERP monitoring, and development that could occur as a result of the revised river corridor boundary in El Portal, could result in localized short-term, minor adverse impacts on air quality during construction activities. However, development in El Portal under Alternative 3 would be less intensive than under Alternative 1. Overall, Alternative 3 would likely have a local, long-term, negligible, beneficial impact on air quality within the Merced River corridor compared to Alternative 1 because any increases in visitor numbers and associated vehicle would likely be lower. Therefore, Alternative 3 would not impair air quality in the park.

Noise

Analysis

The following discussion provides an overview of the types of impacts to the ambient noise environment that could occur within each segment of the Merced River corridor associated with Alternative 3.

Under Alternative 3, the acoustical environment in wilderness areas would generally continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights. The acoustical environment in nonwilderness areas would generally continue to be shaped by human-caused sources of noise and by natural sources of sound. The ambient noise environment in Yosemite National Park would follow trends similar to those described for Alternative 1.

The main differences between noise conditions under Alternative 3 and those under Alternative 1 would relate to the following issues: implementation of a VERP program with daily segment limits; day-use limits in Little Yosemite Valley; and the construction or demolition activities and long-term impacts on the noise environment that could occur as a result of the change in management zoning resulting from adoption of the revised corridor boundary in the El Portal segment of the river.

Impacts in Wilderness. The enjoyment of natural river sounds is integrated into the recreation ORV in designated wilderness areas. That aspect would continue to be considered for protection and enhancement in wilderness areas.

Under Alternative 3, the daily segment limits for all Wilderness segments would be set at the existing wilderness trailhead quotas, and the use of trails in wilderness areas would continue consistent with existing conditions and conditions under Alternative 1.

Implementation of the VERP program with daily segment limits for the wilderness areas would result in additional monitoring of indicators within wilderness areas. The VERP program under Alternative 3 would be the same as described for Alternative 2. Management actions such as visitor education would be expected to result in local, short- and long-term, negligible, beneficial impacts on the enjoyment of natural river sounds and the broader ambient noise environment. More restrictive measures, such as the reduction of trailhead quotas or restrictions on stock use, could have beneficial effects by reducing the number of people recreating within the river corridor, and the River Protection Overlay in particular, and the number of encounters with other parties and the number of people at one time at selected sites in wilderness areas. These more restrictive measures would result in local, short- and long-term, negligible to minor, beneficial impacts on the enjoyment of natural river sounds and the broader ambient noise environment.

Implementing a specific day-use limit in Little Yosemite Valley would help to minimize overall noise levels in this area, and provide a localized long-term minor beneficial impact to noise levels in this segment, compared to Alternative 1.

Overall, the acoustical environment in wilderness areas would, however, continue to experience intrusive noise generated by high-altitude aircraft overflights. In some wilderness areas, such overflights would continue to be the principal source of adverse noise impacts. Noise from high-altitude aircraft overflights may worsen over the long term, if the national trend in the number of aircraft flights continues to increase. The daily segment limits and VERP program with daily segment limits would not address conditions related to aircraft overflights.

Due to the seasonal nature of visitation to the Wilderness segments of the river corridor coupled with the limited number of visitors allowed into the river corridor in wilderness areas as a result of the park's existing trailhead quota system, implementation of the daily segment limit and VERP program would be expected to have a local, long-term, negligible to minor, beneficial impact on the natural enjoyment of river sounds portion of the recreation ORV and the broader ambient noise environment in wilderness areas relative to Alternative 1.

Impacts in Yosemite Valley. As under Alternative 1, under Alternative 3 the acoustical environment in Yosemite Valley would generally continue to be shaped by human-caused sources of noise and by natural sources of sound. Under Alternative 3, the ambient noise environment in wilderness and nonwilderness areas of the Valley would follow trends similar to those described under Alternative 1.

In the short term, visitor levels and associated traffic in the Valley would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than Alternative 1 as a result of daily segment limits and the VERP program.

Implementation of the VERP program with daily segment limits could have an indirect, beneficial impact on the ambient noise environment in the Valley. Park management would manage the number of visitors in the Valley to ensure that the daily segment limits are not exceeded. If visitor numbers exceed the limits, management would reduce visitor numbers through entrance station restrictions, day-use permit requirements, or other means. Restrictions on the number of visitors in the Valley in the long term would likely result in fewer people in the Valley and could indirectly result in fewer vehicle trips on park roads, fewer associated vehicle-miles traveled, and correspondingly lower roadside noise levels.

The VERP program under Alternative 3 would be the same as described under Alternative 2. Management actions such as visitor education would be expected to result in local, short- and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures could have beneficial noise effects by reducing the number of vehicles or buses, or the number of people recreating with the river corridor. These more restrictive measures would also result in fewer vehicle trips and lower roadside noise levels. On this basis, management actions resulting from daily segment limits and VERP monitoring could result in local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the Valley.

Conversely, implementation of management actions that result in site hardening, construction of new facilities or removal of existing facilities could result in construction or demolition activities that could generate substantial amounts of noise during the temporary construction period. At each individual construction or demolition site, the related noise impact would vary depending upon a number of factors, such as the number and types of equipment in operation on a given day, their usage rates, the level of background noise in the area, and the distance between sensitive uses and the construction site. However, in general, given the low background noise levels away from park roadways and the expectation of visitors that the environment be free of excessive noise sources (if not naturally quiet), the impact from construction or demolition activities would generally be local, short-term, moderate, and adverse. Implementation of mitigation measures as described in Appendix B would reduce the temporary and localized noise impacts from equipment associated with construction or demolition activities from a moderate to a minor level. On this basis, these types of management actions could result in localized, short-term, minor, adverse impacts on the ambient noise environment related to their construction.

Overall, Alternative 3 would be expected to prevent visitor use from adversely affecting ORVs. Certain management actions implemented in response to VERP monitoring could result in localized, short-term, minor (with implementation of best management practices), adverse impacts on the ambient noise environment during construction activities. However, taken as a whole, implementation of the VERP program with daily segment limits would be expected to have local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the Valley relative to Alternative 1, since any increases in visitor numbers, associated vehicle use and corresponding noise levels would likely be lower.

Impacts in the Gorge. As under Alternative 1, under Alternative 3, the acoustical environment in areas zoned 1A, 2A, 2A+, and 2B would continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights and distant roadway noise. The acoustical environment in areas zoned 2C, 2D and 3C would continue to be shaped by human-caused sources of noise and by natural sources of sound. The ambient noise environment in the Gorge segment of the river corridor would follow similar trends as described under Alternative 1. Areas zoned 2C, 2D and 3C would continue to experience a local, long-term, minor, adverse effect due to the concentration of vehicular noise in those areas.

In the short term, visitor levels and associated vehicle use in the Gorge segment would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than for Alternative 1 due to daily segment limits and the VERP program.

Implementation of the VERP program with daily segment limits could have an indirect beneficial impact on the ambient noise environment in the Gorge segment. Park management would manage the number of visitors in the Gorge segment to ensure that the daily segment limits are not exceeded. If visitor numbers exceed the limits, management would reduce visitor numbers through limiting entrance station access or reducing parking availability. Restrictions on the number of visitors in the Gorge segment in the long term would likely result in fewer people in the gorge and could indirectly result in fewer vehicle trips on park roads, fewer associated vehicle-miles traveled, and correspondingly lower roadside noise levels.

The VERP program under Alternative 3 would be the same as described under Alternative 2. In general, educational measures would be expected to result in local, short- and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures could have beneficial effects by reducing the number of vehicles or buses, or the number of people recreating within the river corridor. These more restrictive measures could also result in fewer vehicle trips and lower roadside noise levels. On this basis, management actions could result in local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the Gorge segment.

Conversely, implementation of management actions that include site-hardening activities, construction of new facilities or removal of existing facilities could have local, short-term, minor (with implementation of best management practices), adverse noise effects related to their construction, as discussed under the Yosemite Valley segment above.

Overall, Alternative 3 would be expected to prevent visitor use from adversely affecting ORVs. Certain management actions implemented in response to VERP monitoring could result in localized, short-term, minor to moderate (with implementation of best management practices), adverse impacts on the ambient noise environment during construction activities. Overall, implementation of daily segment limits and the VERP program would be expected to have local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the gorge relative to Alternative 1, since any increases in visitor numbers, associated vehicle use and corresponding noise levels would likely be lower.

Impacts in El Portal. Under Alternative 3, the boundary for the El Portal segment of the river corridor in this alternative would be based upon a quarter-mile boundary. The zoning in El Portal within this alternative would call for low-intensity zoning (zone 2B) for the majority of the area south of the river and higher development zoning (3C) in the vicinity of existing development areas and on other potentially developable sites. Several smaller areas south and north of the river would be zoned for day use (2C). Generally, development in the El Portal area would be less flexible under Alternative 3 than under Alternative 1, where the boundary would be limited to the 100-year floodplain or River Protection Overlay, whichever is greater. The total acreage within the El Portal segment of the river corridor under Alternative 3 would be 853 acres, which would be four times greater than the boundary presented under Alternative 1.

The proposed boundary and zoning for the El Portal segment would likely result in some additional development or redevelopment within the areas zoned 3C, and to a lesser extent in areas zoned 2C. The ambient noise environment in these zones could be influenced by noise from construction, demolition or redevelopment activities. At each individual construction or demolition site, the related noise impact would vary depending upon a number of factors, as described under the Yosemite Valley segment above. However, in general, given the low background noise levels away from park roadways and the expectation of visitors that the environment be free of excessive noise sources (if not naturally quiet), the impact from construction or demolition activities would generally be local, short-term, moderate, and adverse. Implementation of mitigation measures as described in Appendix B would reduce the temporary and localized noise impacts from equipment associated with construction or demolition activities from a moderate to a minor level. On this basis, the construction associated with the management zoning under Alternative 3 could result in localized, short-term, minor, adverse impacts on the ambient noise environment. However, overall, development in El Portal under Alternative 3 would be less intensive than under Alternative 1.

The 2C and 3C zoning would allow for concentrated day use and development in the El Portal Administrative Site area, respectively. In the short term, visitor levels in El Portal would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than Alternative 1 due to daily segment limits and VERP monitoring and management. Development and increased day use opportunities could increase the number of vehicle-miles traveled within the El Portal segment of the river corridor. Development in this area could cause a local, long-term, minor, adverse effect on the ambient noise environment due to the concentration of vehicular noise and human activity in these areas.

Implementation of the VERP program with daily segment limits could have an indirect beneficial impact on the ambient noise environment in the El Portal area. Park management would manage the number of visitors in El Portal to ensure that the daily segment limits are not exceeded. If visitor numbers exceed the limits, management would implement measures to limit visitor use to the adopted limit. Restrictions on the number of visitors in El Portal in the long term would likely result in fewer people in El Portal and could indirectly result in fewer vehicle trips on park roads, fewer associated vehicle-miles traveled, and correspondingly lower roadside noise levels. However, since the El Portal segment includes Highway 140, a primary entrance road to the park, reductions in vehicle trips through the segment would be nominal.

The VERP program under Alternative 3 would be the same as described under Alternative 2. Management actions could range from less restrictive measures such as education and site hardening, to more restrictive actions related to reducing visitor activities or access in certain areas, as discussed in previous sections. In general, management actions such as visitor educational measures would be expected to result in local, short- and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures could also result in fewer vehicle trips and lower roadside noise levels. On this basis, management actions or daily segment limits could result in local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the El Portal area.

Conversely, implementation of management actions that include site-hardening activities, construction of new facilities or removal of existing facilities could have local, short-term, minor (with implementation of best management practices), adverse noise effects related to their construction, as discussed under the Yosemite Valley segment above.

Overall, Alternative 3 would be expected to prevent visitor use from adversely affecting ORVs. Implementation of the quarter-mile boundary and certain management actions implemented in response to VERP monitoring could result in localized short-term, minor to moderate (with implementation of best management practices), adverse impacts on the ambient noise environment during construction or redevelopment activities. However, development in El Portal under Alternative 3 would be less intensive than under Alternative 1 as the corridor area would be increased. Overall, implementation of daily segment limits and the VERP program would be expected to have local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the El Portal area relative to Alternative 1, since any increases in visitor numbers, associated vehicle use, and corresponding noise levels would likely be lower.

Impacts in Wawona. As under Alternative 1, under Alternative 3 the acoustical environment in Wawona would generally continue to be shaped by human-caused sources of noise and by natural sources of sound. Under Alternative 3, the ambient noise environment in Wawona would follow trends similar to those described for Alternative 1.

In the short term, visitor levels and associated traffic in Wawona would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than Alternative 1 as a result of daily segment limits and the VERP program.

Implementation of the VERP program with daily segment limits under Alternative 3 could have an indirect beneficial impact on the ambient noise environment in Wawona. Park management would manage the number of visitors in Wawona to ensure that the daily segment limits are not exceeded. If visitor numbers exceed the limits, management would implement measures to limit visitor use to the adopted limit. Restrictions on the number of visitors in Wawona in the long term would likely result in fewer people in Wawona and could indirectly result in fewer vehicle trips on park roads, fewer associated vehicle-miles traveled, and correspondingly lower roadside noise levels.

The VERP program with daily segment limits under Alternative 3 would be the same as described under Alternative 2. In general, management actions such as visitor education would be expected to result in local, short- and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures could have beneficial effects by reducing the number of vehicles, buses, or the number of people recreating within the river corridor. These more restrictive measures could also result in fewer vehicle trips and lower roadside noise levels. On this basis, management actions could result in local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in Wawona.

Conversely, implementation of management actions that include site-hardening activities, construction of new facilities or removal of existing facilities could have local, short-term, minor (with implementation of best management practices), adverse noise effects related to their construction, as discussed under the Yosemite Valley segment above.

Overall, Alternative 3 would be expected to prevent visitor use from adversely affecting ORVs. Certain management actions implemented in response to VERP monitoring could result in localized short-term, minor to moderate (with implementation of best management practices), adverse impacts on the ambient noise environment during construction activities. However, taken as a whole, implementation of the VERP program with daily segment limits would be expected to have local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in Wawona relative to Alternative 1, since any increases in visitor numbers, associated vehicle use and corresponding noise levels would likely be lower.

Summary of Alternative 3 Impacts. As under Alternative 1, the acoustical environment in wilderness areas would not be affected by Alternative 3, but would continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights. The acoustical environment in nonwilderness areas would continue to be shaped by human-caused sources of noise and by natural sources of sound.

Overall, Alternative 3 would be expected to prevent visitor use from adversely affecting ORVs. Certain management actions implemented in response to VERP monitoring, and development that could occur as a result of the revised river corridor boundary in El Portal, could result in localized, short-term, minor (with implementation of best management practices), adverse impacts on the ambient noise environment during construction activities. However, development in El Portal under Alternative 3 would be less intensive than under Alternative 1 as the corridor area would be increased. Less intensive development could have a local, long-term, negligible to minor, beneficial impact on the ambient noise environment in the El Portal area.

Overall, implementation of Alternative 3 would be expected to have a local, long-term, negligible, beneficial impact on ambient noise levels in nonwilderness areas within the Merced River corridor relative to Alternative 1, since any increases in visitor numbers, associated vehicle use and corresponding noise levels would likely be lower due to daily segment limits and the VERP program.

Cumulative Impacts

Cumulative effects to the ambient noise environment are described under Alternative 1.

Based on the revised river corridor in El Portal and implementation of certain management actions that could be implemented in response to VERP monitoring, Alternative 3 could contribute to the cumulative number of construction sites in and near the corridor; in most instances, construction projects undertaken as part of Alternative 3 would not overlap in time and space with cumulative construction projects, and thus the local, short-term adverse effects on noise due to construction activities could be reduced to a moderate intensity with implementation of best management practices. Over the long term, in wilderness areas, noise impacts in the corridor would be determined almost entirely by cumulative trends in air travel rather than by in-park noise sources under Alternative 3; as discussed under Alternative 1, if the national trend in air travel continues to increase, it could result in a local, long-term, minor, adverse effect on the ambient noise environment. In nonwilderness areas, the cumulative actions that would tend to reduce motor vehicle trips would result in a local, long-term, moderate, adverse effect on noise levels in the immediate vicinities of such facilities due to the concentration of vehicular activity, but could result in a local, long-term, moderate, beneficial effect in the eastern portion of the Valley due to reduced vehicle trips and associated noise, and related to the type of bus technology used for transit purposes.

Taken as a whole, Alternative 3, with implementation of the VERP program with daily segment limits and its more restrictive development scheme in the El Portal area, would have a local, long-term, negligible to minor, beneficial impact on the ambient noise environment in the Merced River corridor relative to Alternative 1.

Impairment

Management actions implemented in response to VERP monitoring, and development that could occur as a result of the revised river corridor boundary in El Portal, could result in localized short-term, minor to moderate (with implementation of best management practices), adverse impacts to the noise environment and the soundscapes in the vicinities of construction or demolition projects. However, development in El Portal under Alternative 3 would be less intensive than under Alternative 1. Overall, Alternative 3 with implementation of the VERP program with daily segment limits and its more restrictive development scheme in the El Portal area would have a local, long-term, negligible to minor, beneficial impact on the ambient noise environment in the Merced River corridor relative to Alternative 1, since any increases in visitor numbers, associated vehicle use and corresponding noise levels would likely be lower due to daily segment limits and VERP monitoring and management. Therefore, implementation of Alternative 3 would not impair park soundscapes.

Cultural Resources

Archeological Resources

Analysis

The following discussion provides an overview of the types of impacts to archeological resources that could occur within each segment of the Merced River corridor from implementation of the park's user capacity management program with daily segment limits and a VERP program. Effects on cultural resources due to the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Management actions associated with the redirection of visitors from areas with known archaeological resources and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Archeological resources include historic and prehistoric resources related to occupation and homesteading, hunting, travel and trade, the U.S. Cavalry, and wilderness tourism.

User capacity within wilderness areas of Yosemite National Park is addressed through trailhead limits and monitoring of wilderness resource conditions. Limits for Wilderness segments would be set at the existing trailhead quota numbers. Implementation of the VERP program for the wilderness areas would result in additional monitoring of indicators within wilderness areas. VERP indicators to be monitored in wilderness zones are listed in table II-5.

Implementation of a day-use limit to limit the number of people in Little Yosemite Valley during periods of peak use would have a long-term, negligible to minor, beneficial impact on archeological resources due to a decrease in visitor-related damages such as erosion, trampling, and surface collection.

Since the daily segment limits for the wilderness areas would be set at the current trailhead quota system levels, no additional management actions would be needed to implement the daily segment limits. Implementation of the daily segment limits in the wilderness areas would have no effect on cultural resources as compared to the No Action Alternative.

Under Alternative 3, the effects of the VERP program would be similar to those discussed under Alternative 2. The impacts of the management actions implemented as a result of VERP monitoring vary depending on the action taken. Education efforts are expected to result in local, short- and long-term, minor, beneficial impacts on archeological resources. More restrictive measures would likely have local, long-term, moderate, beneficial effects on the archeological resources due to a potential decrease in degradation of archeological deposits.

Implementing daily segment limits would not affect archeological resources in the wilderness, as compared to the No Action Alternative. Implementation of restrictive measures that reduce wilderness use beyond the existing trailhead limits in response to VERP monitoring and Lower Yosemite Valley day-use limits is also expected to have a local, long-term, moderate, beneficial impact on archeological resources due to a potential reduction in visitor impacts to these resources.

Impacts in Yosemite Valley. Archeological resources in Yosemite Valley include several historic and prehistoric sites and districts that relate to homesteading, long-term and seasonal occupation, early tourism, the U.S. Cavalry, historic roads and trails, and early park administration.

Limits for the Yosemite Valley segment are set close to existing levels of use. The park would manage the number of visitors in the Valley to ensure that the daily segment limits are not exceeded. If the limits are exceeded, management would take actions to reduce visitor numbers. Management actions could include limiting commercial and/or regional transit bus numbers, requiring commercial bus reservations, instituting a day-use reservation program, rerouting visitors trying to enter the Valley once the limit is reached, or instituting entrance station closures when the limit is reached.

The results of these management actions would depend upon the management action taken. Since all of the management actions would be aimed at lowering the number of people accessing Yosemite Valley, the local, long-term impact on archeological resources within Yosemite Valley would be minor to major and beneficial, because this measure is likely to result in lower levels of visitors in the Valley in the long term, and would therefore decrease traffic and crowding on and around archeological resources compared to the No Action Alternative.

In addition to managing visitor numbers within the Valley, additional management actions could be implemented under VERP. The effects of VERP under Alternative 3 would be the same as those discussed under Alternative 2. Educational measures would result in local, short- and long-term, negligible to minor, beneficial effects on archeological resources. More restrictive measures would benefit archeological resources by reducing opportunities for site degradation. These measures could result in short-term or long-term, moderate, beneficial impacts to archeological resources. Site-hardening activities could result in adverse effects on archeological resources if proposed facilities damage deposits or increase the likelihood of visitor-related damage. These actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement. The effects of these actions on archeological resources would likely be local, long term, negligible to minor, and adverse.

Overall, implementation of the proposed user capacity program with daily segment limits and VERP monitoring, coupled with the implementation of appropriate management actions based on monitoring results, would have a local, long-term, moderate, beneficial impact on archeological resources, except for site hardening activities, which have the potential to cause a local, long-term, minor, adverse impact on archeological resources.

Impacts in the Gorge. Archeological resources in the Gorge segment include historic and prehistoric sites related to occupation, the Civilian Conservation Corps, early roads and trails, road development, and early tourism.

The daily segment limits for the Gorge are based on current use assumptions and available parking. The park would manage the number of visitors in the Gorge to ensure that the daily segment limits are not exceeded. If limits are exceeded, management would take actions to reduce visitor numbers. Since access to the Gorge is limited by the available parking, management could reduce parking in the Gorge to reduce use levels. Management actions could also include instituting a day-use reservation program for entry into the park, or instituting entrance station closures when the limit is reached. These measures would control the overall number of people able to access the Gorge.

The results of these management actions would depend upon the management action taken. Implementation of daily segment limits would result in negligible effects in the short term, since the limit would be set at existing use levels. In the long term, the level of use would likely be lower than under the No Action Alternative. Since current use levels are low, visitor-related damage to archeological resources (such as trampling, erosion, or surface collection) is also low. This further reduction of use would provide a local, long-term, minor, benefit to archeological resources in the Gorge.

In addition to managing visitor numbers within the Gorge, additional management actions would be implemented if monitoring of the VERP indicators shows that standards for these indicators are not being met. The effects of VERP under Alternative 3 would be the same as those described under Alternative 2. Educational measures are expected to result in local, short and long term, negligible to minor, beneficial effects, as described above. More restrictive measures would be expected to provide for a less crowded and more natural environment. These measures could result in short-term or long-term, moderate, beneficial impacts to archeological resources. Site hardening activities could result in some adverse effects on archeological resources, but would be limited to areas designated for higher levels of development and use—Attraction (2D) and Park Operations and Administration (3C). These actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement. The effects would likely be local, long term, negligible to minor, and adverse.

Overall, Alternative 3, would have a local, long-term, moderate, beneficial impact on archeological resources in the Gorge segment, except for site-hardening activities, which have the potential to cause a local, long-term, negligible to minor, adverse impact on archeological resources.

Impacts in El Portal. Archeological resources in El Portal consist of some of the oldest prehistoric sites within the Merced River corridor. Prehistoric and historic archeological sites and districts in El Portal include examples of villages, homesteads, early tourism, as well as the mining, railroad, and timber industries.

The boundary for the El Portal segment in Alternative 3 was based upon a quarter-mile boundary. The zoning proposed for the El Portal corridor under Alternative 3 calls for Park Operations and Administration (3C) north of the river and in existing developed areas south of the river, with a small amount of Day Use (2C). The majority of the undeveloped areas south of the river would be zoned as low-intensity Discovery (2B). The few developed areas south of the river would be zoned 3C or 2C. An important portion of one archeology site would be zoned 2C.

The proposed Alternative 3 boundary and zoning designations for the El Portal segment is likely to result in some additional development or redevelopment within the 3C areas, but the 2B and 2C zoning along much of the corridor and south of the river would substantially limit new development in El Portal. This increased development north of the river could result in an adverse effect to archeological resources. However, the effect of new development on archeological resources within the segment would vary depending on the nature of the development and its proximity to archeological sites. All development would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement.

New development would also be subject to the consistent set of criteria and considerations adopted in the Merced River Plan, as well as the current park management policies. These management policies guide how actions could be implemented in order to minimize adverse effects to cultural resources. ORVs must be protected on a segmentwide basis regardless of the zoning designation or whether or not the resources are in or outside of the river corridor boundary. Therefore, the adverse effect of new development on archeological resources within the segment would likely be local, long term, and negligible to minor.

The Discovery (2B) zoning south of the river is characterized by quiet and natural areas. Only limited development would be appropriate in this zone. Because this intended use is similar to the current use of the area, no impacts are likely to occur compared to the No Action Alternative.

The application of the revised El Portal river corridor boundary under Alternative 3 is expected to have a local, long-term, minor to moderate, beneficial effect on archeological resources in the El Portal segment compared to Alternative 1 due to the increased area included within the corridor and zoning restrictions.

Implementation of daily segment limits for El Portal is expected to have negligible effects on archeological resources in the short term, since visitor use of this area is limited. Future growth in the use of this area could require implementation of measures to restrict visitor use to the adopted limits, removing parking areas or closing certain areas. Implementation of these types of measures to restrict or reduce use would result in local, long-term, negligible, beneficial effects on archeological resources as compared to the No Action Alternative.

Implementation of a VERP program in El Portal under Alternative 3 would result in the same effects described under Alternative 2. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects. More restrictive measures would likely provide for a less crowded and more natural environment. These measures could result in short-term or long-term, moderate to major, beneficial impacts to archeological resources. Site hardening activities could result in some adverse effects on archeological resources. These actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement. The effects would likely be local, long term, negligible to minor, and adverse.

Short- and long-term, moderate, adverse effects to archeological resources could occur in areas zoned Park Operations and Administration (3C) as the result of future actions that could be implemented under the this zoning category (e.g., new employee housing, road repair). However, adverse effects would be reduced in intensity under Alternative 3 because these actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement. The implementation of daily segment limits and a VERP program could have long-term, moderate, beneficial impacts on archeological resources and local, long-term, negligible, adverse impacts, depending on the management action taken.

Impacts in Wawona. Archeological resources in Wawona include historic and prehistoric sites and districts that relate to homesteading, long-term and seasonal occupation, early tourism, the U.S. Cavalry, historic roads and trails, and early park administration.

Implementation of daily segment limits for Wawona are expected to have negligible effects on archeological resources in the short term. If future visitor use levels in Wawona reached the daily segment limit, management would take actions to restrict or reduce visitor levels to meet the proposed limits. Visitor use could be reduced by reducing parking, requiring reservations, or limiting overall numbers of visitors into the area through the South Entrance Station. Due to the decreased likelihood of visitor impacts on archeological deposits, these measures could have local, long-term, minor to moderate, benefits on archeological resources as compared to the No Action Alternative.

Implementation of the VERP program throughout the Wawona segment would have the same effects as described under Alternative 2. Educational efforts would be expected to result in local, long-term, negligible to minor, benefits to archeological resources. More restrictive measures could have short-term or long-term, moderate to major, beneficial impacts to archeological resources. Site hardening activities could result in adverse effects on archeological resources if the proposed facilities would damage deposits or increase the likelihood of visitor-related damage. Overall, the effects of new development would likely be local, long-term, negligible to minor, and adverse.

Summary of Alternative 3 Impacts. Compliance with existing park policies and federal laws (such as the National Historic Preservation Act and VERP program with daily segment limits) would help ensure that the archeological component of the cultural ORV in each river segment is protected and enhanced.

Under Alternative 3, overall visitor numbers in the future would likely be lower than under Alternative 1. Segment limits and management actions taken to protect ORVs and other resources would result in less congestion and crowding and less likelihood of visitor-related damage to cultural resources. If restrictive management actions are required to achieve these conditions, there would be moderate benefits to archeological resources. The larger river corridor boundary and management zones in El Portal under Alternative 3 would reduce development potential in El Portal and result in a minor, beneficial effect on archeological resources.

Cumulative Impacts

Cumulative effects to archeological resources for past, present, and future projects would be the same as those identified and described under Alternative 1.

Past, present, and reasonably foreseeable future cumulative actions could have long-term, beneficial impacts and long-term, adverse impacts on archeological resources of the cultural

ORVs within the Merced River corridor. Overall, these cumulative actions in combination with Alternative 3 could have a net long-term, moderate, adverse impact on archeological resources with the Merced River corridor.

Impairment

Because adverse impacts to archeological resources are negligible or minor, Alternative 3 is not expected to impair the park's archeological resources for future generations.

National Historic Preservation Act Section 106 Summary

Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in no adverse effect to historic properties listed in or eligible for listing in the National Register of Historic Places, because the plan does not prescribe specific action. Future actions that are allowed under the proposed alternative would undergo environmental review to determine potential effects on historic properties.

Traditional Cultural Resources

Analysis

The following discussion provides an overview of the types of impacts to traditional cultural resources that could occur within each segment of the Merced River corridor under Alternative 3 from implementation of the park's user capacity management program with daily segment limits and a VERP program. Effects on cultural resources due to the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Management actions associated with the redirection of visitors from areas with known traditional cultural resources and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Traditional cultural resources in the Wilderness segments include continuing uses such as the travel/trade routes connecting the east and west slopes of the Sierra Nevada range.

User capacity within wilderness areas of Yosemite National Park is addressed through trailhead quotas and monitoring of wilderness resource conditions. Limits for Wilderness segments would be set at the existing trailhead quota system numbers. Implementation of the VERP program for the wilderness areas would result in additional monitoring of indicators within wilderness areas, as described under Alternative 2.

Since the daily segment limits for the wilderness areas would be set at the current trailhead quota system levels, no additional management actions would need to be taken to implement the daily segment limits. Implementation of the daily segment limits in the wilderness areas would have no effect on cultural resources compared to the No Action Alternative. Implementation of a day-use limit to limit the number of people in Little Yosemite Valley during periods of peak use would have no effect on traditional cultural resources.

The impacts of the management actions implemented as a result of VERP would vary depending on the action taken. Management actions related to visitor education are expected to reduce impacts to traditional cultural resources by encouraging more dispersion of visitors within wilderness areas and changing visitor behaviors by providing information on activities that cause adverse impacts. Educational efforts would likely result in local, short and long-term, negligible, beneficial impacts on traditional cultural resources. More restrictive measures, such as reducing trailhead quotas, restricting stock use, and limiting day-use access in heavily used areas to users with permits or guided groups, would be expected to have local, long-term, negligible, beneficial effects on traditional cultural resources.

Implementation of restrictive measures that reduce wilderness use beyond the existing trailhead quotas in response to VERP monitoring would likely have a local, long-term, negligible, adverse impact on traditional cultural resources due to a potential reduction in American Indian access to these resources.

Overall, implementing daily segment limits and a day-use limit in Lower Yosemite Valley would not affect traditional cultural resources in the wilderness compared to the No Action Alternative. Implementation of restrictive measures that reduce wilderness use beyond the existing trailhead quotas in response to VERP monitoring area likely to have a local, long-term, negligible, beneficial impact on traditional cultural resources due to a potential reduction in visitor impacts to these resources.

Impacts in Yosemite Valley. Traditional cultural resources in Yosemite Valley encompass many natural and cultural features throughout the Valley that are traditionally valued by local American Indian groups. These resources include, gathering areas, religious sites, village sites, and cemeteries.

Limits for the Yosemite Valley segment would be set close to existing levels of use. The park would manage the number of visitors in the Valley to ensure that the daily segment limits are not exceeded. If the limits are exceeded, management would take actions to reduce visitor numbers. Management actions could include limiting commercial and/or regional transit bus numbers, requiring commercial bus reservations, instituting a day-use reservation program, rerouting visitors trying to enter the Valley once the limit is reached, or instituting entrance station closures when the limit is reached.

The results of these management actions would depend upon the management action taken. Since all of the management actions would be aimed at lowering the number of people accessing Yosemite Valley, the impact would be local, long-term, minor to moderate, and beneficial, because this measure is likely to lower visitor levels in the Valley in the long term, and would therefore decrease traffic and crowding on and around traditional cultural resources as compared to the No Action Alternative. American Indian access to these resources would continue to be guided by the park's agreements with the tribes such as the Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities (NPS 1997a). Therefore, these actions could result in short-term or long-term, moderate to major beneficial impacts on traditional cultural resources through resource protection.

In addition to managing visitor numbers within the Valley, additional management actions could be implemented under VERP. The effects of management actions taken within the Valley would vary by the action taken. Educational measures would be expected to result in improvements to the natural and cultural setting, and therefore would be expected to result in local, short and long term, negligible to minor, beneficial effects on traditional cultural resources. More restrictive measures would benefit the traditional cultural resources by reducing opportunities for resource degradation, such as trampling and erosion. American Indian access to these resources will continue to be guided by the park's agreements with the tribes. Therefore, these measures could result in short-term or long-term, moderate to major, beneficial impacts to traditional cultural resources through resource protection.

Overall, implementation of the proposed user capacity program with daily segment limits and VERP under Alternative 3 is expected to have a moderate benefit to traditional cultural resources. Where these goals are achieved through education, the effect on traditional cultural resources is expected to be long term, negligible, and beneficial. Management actions that result in long-term, broad-based restrictions on visitor transportation options, types of activities, and levels of use could have long- term, moderate to major, beneficial impacts or minor, adverse impacts to traditional cultural resources.

Impacts in the Gorge. Traditional cultural resources in the Gorge segment include gathering areas and villages.

Under Alternative 3, limits for the Gorge segment would be based on current use assumptions and available parking. The park would manage the number of visitors in the Gorge to ensure that the daily segment limits are not exceeded. If limits are exceeded, management would take actions to reduce visitor numbers. Since access to the Gorge is limited by the available parking, management could reduce parking in the Gorge to reduce use levels. Management actions could also include instituting a day-use reservation program for entry into the park, or instituting entrance station closures when the limit is reached. These measures would control the overall number of people able to access the Gorge.

The results of these management actions would depend upon the action taken. Implementation of the daily segment limits would result in negligible effects in the short term, since the limit would be set at existing use levels. In the long term, the level of use would likely be lower than under the No Action Alternative. Since current use levels are low, visitor-related damage to traditional cultural resources (such as trampling, erosion, or surface collection) is also low. This further reduction of use would provide a local, long-term, minor to moderate, benefit to traditional cultural resources in the Gorge.

In addition to managing visitor numbers within the Gorge, management actions could be implemented under VERP. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures would benefit traditional cultural resources by reducing opportunities for resource degradation, such as trampling and erosion. American Indian access to these resources would continue to be guided by the park's agreements with the tribes. Therefore, these measures could result in local, short-term or long-term, moderate to major, beneficial impacts to traditional cultural resources through resource protection.

Overall, implementation of the proposed user capacity program with daily segment limits and a VERP program is expected to have a moderate benefit to traditional cultural resources. Where these goals are achieved through education, the effect on traditional cultural resources is expected to be long-term, negligible, and beneficial. Management actions that result in long-term, broad based restrictions on visitor transportation options, types of activities, and levels of use could have long-term, moderate to major, beneficial impacts or minor, adverse impacts to traditional cultural resources.

Impacts in El Portal. Traditional cultural resources in El Portal consist of, but are not limited to, gathering areas, cemeteries, geological features of traditional spiritual importance, and prehistoric and historic village sites. Like Yosemite Valley, contemporary associated tribes consider all of El Portal to be a traditional use area.

The boundary for the El Portal segment of the river in Alternative 3 would be based on a quarter-mile boundary. The zoning for the El Portal corridor under this alternative calls for Park Operations and Administration (3C) north of the river, and low-intensity Discovery (2B) zoning for the majority of the undeveloped areas south of the river. A few small pockets of land north and south of the river would be zoned Day Use (2C).

The proposed boundary and zoning designations for the El Portal segment would allow additional development or redevelopment within the areas zoned 3C. But the areas zoned 2B and 2C along much or the corridor and south of the river would substantially limits new development in El Portal. Increased development north of the river could result in an adverse effect. However, the effect of new development on traditional cultural resources would vary depending on the nature of the development and its proximity to traditional cultural resources. If the construction of proposed new facilities temporarily leads employees or visitors closer to a traditional cultural resource, the effect could be local, short term, minor, and adverse. If the facilities were to increase visitor or employee exposure to traditional cultural resources, the effect could be local, long term, minor, and adverse. Conversely, if the proposed new facilities avoid traditional cultural resources and reduce visitor/employee-related damage to these resources, the Park Operations and Administration (3C) management zoning could have a local, long-term, negligible to minor beneficial impact.

The Discovery (2B) zoning south of the river is characterized by quiet and natural areas. Only limited development would be appropriate in this zone. Because this intended use is similar to the current use of the area, no impacts are likely to occur under Alternative 3 compared to the No Action Alternative.

The Day Use (2C) zoning south and north of the river allows for development of trails, restrooms, and picnic areas. This increased development south of the river could result in a short-term or long-term, minor to moderate, adverse impact on traditional cultural resources. If the construction of new development temporarily leads visitors closer to traditional cultural resources, the effect could be local, short term, minor, and adverse. If the development were to increase visitor exposure to traditional cultural resources, the effect could be local, long term, minor, and adverse.

All development would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and in consultation with associate American Indian groups. New development would also be subject to the consistent set of criteria and considerations adopted in the Merced River Plan, as well as current park management policies. These management policies guide how actions could be implemented to minimize adverse effects to cultural designations or whether the resources are in or outside of the river corridor boundary. Therefore, the adverse effect of new development on traditional cultural resources within the El Portal segment would likely be local, long term, and negligible to minor.

In general, the river corridor and management zoning under Alternative 3 would have a local, long-term, minor to moderate, beneficial effect to traditional cultural resources when compared to the No Action Alternative.

Implementation of VERP within the El Portal segment would have the same effects as those described under Alternative 2. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects. More restrictive measures would benefit traditional cultural resources by reducing opportunities for resource degradation such as trampling and erosion. American Indian access to these resources would continue to be guided by the park's agreements with the tribes such as the Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities (NPS 1997a). Therefore, these measures could result in local, short-term or long-term, moderate to major, beneficial impacts to traditional cultural resources through resource protection

Overall, local, short- and long-term, negligible to minor, adverse impacts to traditional cultural resources and local, short- and long-term, moderate, beneficial impacts on traditional cultural resources could occur as a result of future actions that could be implemented under the proposed zoning. However, adverse effects would be reduced in intensity under Alternative 3 by the application of zoning and other Merced River Plan elements within the larger, revised river corridor boundary (as compared to Alternative 1). The implementation of daily segment limits and a VERP program could have long-term, moderate, beneficial impacts.

Impacts in Wawona. Traditional cultural resources in Wawona include gathering areas, cemeteries, and village sites.

Implementation of daily segment limits for the Wawona segment is expected to have negligible effects on traditional cultural resources in the short term. If future visitor use levels in Wawona reached the daily segment limits, management would take actions to restrict or reduce visitor levels to meet the proposed limits. Visitor use could be reduced by reducing parking, requiring reservations, or limiting overall numbers of visitors into the area through the south entrance station. Due to the decreased likelihood of visitor impacts (such as trampling and erosion) on traditional cultural resources, these measures could have local, long-term, negligible to minor, benefits on traditional cultural resources as compared to the No Action Alternative.

Implementation of the VERP program under Alternative 3 would be the same as described under Alternative 2. Educational efforts are expected to result in local, long-term, negligible to minor, benefits to traditional cultural resources. More restrictive measures would benefit traditional cultural resources by reducing opportunities for resource degradation, such as trampling and erosion. American Indian access to these resources would continue to be guided by the park's agreements with the tribes. Therefore, these measures could result in local, short-term or long-term, moderate to major, beneficial impacts to traditional cultural resources through resource protection.

Summary of Alternative 3 Impacts. Compliance with existing park policies including the 1999 Programmatic Agreement; the 1997 Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities; and federal laws such as the National Historic Preservation Act, American Indian Religious Freedom Act, and Native American Graves Protection and Repatriation Act would help ensure that the cultural ORVs in each river segment are being protected and enhanced.

Under Alternative 3, overall visitor numbers in the future would likely be lower than under Alternative 1. Segment limits and management actions taken to protect ORVs and other resources would result in less congestion and crowding and less likelihood of visitor-related damage to cultural resources. Improvements to the natural setting and reduced crowding and congestion are expected to provide benefits to traditional cultural resources within the corridor. If restrictive management actions are required to achieve these natural and social conditions, there would be moderate benefits to traditional cultural resources related to an improved natural environment and a minor, adverse effect due to a decrease in the ability for American Indians to access these resources. The larger river corridor boundary and management zones in El Portal under Alternative 3 would result in less development potential in El Portal and would likely have a minor beneficial effect on traditional cultural resources.

Cumulative Impacts

A detailed discussion of impacts from past, present, and future projects is provided under Alternative 1.

Past, present, and reasonably foreseeable future cumulative actions could have long-term, beneficial impacts on traditional cultural resources and the traditional cultural resource component of the cultural ORV within the Merced River Corridor. Overall these cumulative actions in combination with Alternative 3 could have a net long-term, minor, beneficial impact on traditional cultural resources with the Merced River corridor. They could also result in a long-term, minor, adverse impact due to increased development and visitor-related damage.

Impairment

Because impacts to traditional cultural resources are primarily beneficial, Alternative 3 is not expected to impair the park's traditional cultural resources for future generations.

National Historic Preservation Act Section 106 Summary

Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in no adverse effect to historic properties listed in or eligible for listing in the National Register of Historic Places, because the plan does not prescribe specific action. Future actions that are allowed under the proposed alternative would undergo environmental review to determine potential effects on historic properties.

Historic Sites, Structures, and Landscapes

Analysis

The following discussion provides an overview of the types of impacts to historical sites, structures, and landscapes that could occur within each segment of the Merced River corridor under Alternative 3 from implementation of daily segment limits and a VERP program. Effects on these resources due to the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Historic sites, structures, and landscapes in the wilderness include the Merced Lake High Sierra Camp, John Muir Trail, remains of the original Yosemite Grant boundary fence, U.S. Cavalry trails, and sites associated with early stock grazing.

User capacity within wilderness areas of Yosemite National Park is addressed through a trailhead quota system and monitoring of wilderness resource conditions. Limits for Wilderness segments would be set at the existing trailhead quota system numbers. Implementation of the VERP program for the wilderness areas under Alternative 3 would be the same as described under Alternative 2.

Since the daily segment limits for the wilderness areas would be set at the current trailhead quota system levels, no additional management actions would be needed to implement the limits. Implementation of the daily segment limits in the wilderness areas would have no effect on cultural resources compared to the No Action Alternative.

Implementation of a day-use limit to limit the number of people in Little Yosemite Valley during periods of peak use would have no effect on historic sites, structures, and landscapes.

The impacts of the VERP management actions would vary depending on the action taken. Management actions related to visitor education are expected to reduce impacts to historic sites, structures, and landscapes by encouraging more dispersion of visitors within wilderness areas and changing visitor behaviors by providing information on activities that cause adverse impacts. Educational efforts would be likely result in local, short and long-term, minor, beneficial impacts to historic resources. If VERP monitoring indicates that more restrictive measures are needed to reduce wilderness use (such as reducing trailhead quotas, restricting stock use, and limiting day-use access in heavily used areas to users with permits or guided groups), there would be a local, long-term, negligible to minor, beneficial effects on historic sites, structures, and landscapes. These beneficial effects would be due to a potential decrease in visitor-related damage, such as trampling, vandalism, and wear and tear.

Overall, implementing daily segment limits and day-use limits in Little Yosemite Valley is not expected to affect historic sites, structures, and landscapes in the wilderness compared to the No Action Alternative. The implementation of restrictive measures that reduce wilderness use beyond the existing trailhead limits is expected to have a local, long-term, moderate, beneficial impact due to a potential reduction in visitor-related damage to these resources.

Impacts in Yosemite Valley. Historic sites, structures, and landscapes in Yosemite Valley include the Yosemite Valley Historic District, which consists of historic bridges, a campground, orchards, trails, roads, residences, administrative facilities, and visitor accommodations. This district includes the Yosemite Village Historic District and the Curry Village Historic District. The Valley also contains several National Register-eligible or -nominated historic buildings and three National Historic Landmarks: the LeConte Memorial Lodge, the Ranger's Club, and The Ahwahnee.

The daily segment limits for the Yosemite Valley segment would be close to existing levels of use. The park would manage the number of visitors in the Valley to ensure that the daily segment limits are not exceeded. If the limits were exceeded, management would take actions to reduce visitor numbers. Management actions could include limiting commercial and/or regional transit bus numbers, requiring commercial bus reservations, instituting a day-use reservation program, rerouting visitors trying to enter the Valley when the limit is reached, or instituting entrance station closures when the limit is reached.

The results of these management actions would depend on the action. Since all of the management actions would be aimed at lowering the number of people accessing Yosemite Valley, the local, long-term impact on historic sites, structures, and landscapes within the Valley would be minor to moderate and beneficial. This measure would likely result in lower levels of visitors in the Valley in the long term, and would therefore decrease the likelihood of visitor-related damage, such as vandalism, erosion, and wear and tear.

In addition to managing visitor numbers within the Valley, additional management actions would be implemented under VERP. The effects of VERP under Alternative 3 would be the same as described under Alternative 2. Educational measures designed to change visitor behaviors in ways that reduce vegetation trampling, riverbank erosion, and social trails, are expected to improve the natural and cultural setting and therefore result in local, short- and long-term, negligible to minor, beneficial effects on historic sites, structures, and landscapes. More restrictive measures, such as limits on activities near the river, reduced activity levels, or restrictions on car and/or bus access to Yosemite Valley, would benefit these resources by reducing opportunities for visitor-related damage such as vandalism, erosion, and wear and tear. These measures could result in short-term or long-term, moderate, beneficial impacts to historic sites, structures, and landscapes. Site-hardening activities, such as construction of boardwalks, picnic facilities, or roadway improvements, could result in adverse effects on historic landscapes if the new design is incompatible with the character of the landscape. However, these actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement and the design guidelines for Yosemite Valley (NPS 2004c). If the design is compatible with the historic landscape character, and if the new facilities reduce the likelihood of visitor-related damage to historic sites, structures, and landscapes, then site hardening activities could have a local, long-term, moderate, beneficial effect on these resources.

Overall, Alternative 3 is expected to have a minor to moderate benefit to historic sites, structures, and landscapes by reducing the likelihood of visitor-related damage to these resources. Where these goals are achieved through education, the effect is expected to be long-term, negligible, and beneficial. Management actions that result in long-term, broad-based restrictions could have long-term, moderate to major, beneficial impacts to these resources. Other actions, such as site hardening, could have long-term, minor to moderate, adverse effects or long-term, moderate, beneficial effects on historic sites, structures, and landscapes.

Impacts in the Gorge. Historic sites, structures, and landscapes in the Gorge segment include the Merced Canyon Travel Corridor and the remaining structures associated with the Yosemite Valley Hydroelectric Power Plant.

Limits for the Gorge segment are based on current use assumptions and available parking. The park would manage the number of visitors in the Gorge to ensure that the daily segment limits are not exceeded. If the limits were exceeded, management would take actions to reduce visitor numbers. Since access to the Gorge is limited by the available parking, management could reduce parking to reduce use levels. Management actions could also include instituting a day-use reservation program for entry into the park or instituting entrance station closures when the limit is reached. These measures would control the overall number of people able to access the Gorge.

The results of these management actions would depend on the action taken. Implementation of daily segment limits would result in negligible effects in the short term, since the limits would be set at existing use levels. In the long term, the level of use would likely be lower than under the No Action Alternative. Since current use levels are low, visitor-related damage to historic sites, structures, and landscapes (such as vandalism, erosion, and wear and tear) is also low. This further reduction of use would provide a local, long-term, minor to moderate benefit to historic sites, structures, and landscapes in the Gorge segment.

In addition to managing visitor numbers within the Gorge segment, the park would implement VERP. The effects of VERP under Alternative 3 would be the same as described under Alternative 2. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures, such as limits on activities near the river or reduced activity levels, would benefit these resources by reducing opportunities for visitor-related damage. These measures could result in short-term or long-term, negligible to minor, beneficial impacts to historic sites, structures, and landscapes. Site-hardening activities, such as construction of picnic facilities or roadway improvements, could result in adverse effects on historic landscapes if the new design is incompatible with the character of the landscape. However, these actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement and the design guidelines for Yosemite Valley (NPS 2004c). If the design is compatible with the historic landscape character, and if the new facilities reduce the likelihood of visitor-related damage to historic sites, structures, and landscapes, then site hardening activities could have a local, long-term, moderate, beneficial effect on these resources.

Overall, Alternative 3 is expected to have a minor to moderate benefit to historic sites, structures, and landscapes in the Gorge segment by reducing the likelihood of visitor-related damage to these resources. Where these goals are achieved through education, the effect is expected to be long-term, negligible, and beneficial. Management actions that result in long-term, broad-based restrictions could have long-term, moderate to major, beneficial impacts to these resources. Other actions such as site hardening could have long-term, minor to moderate, adverse effects or long-term, moderate, beneficial effects on historic sites, structures, and landscapes.

Impacts in El Portal. Historic sites, structures, and landscapes in El Portal consist of the Old El Portal cultural landscape, the Murchison (National Lead Company) structures, railroad houses, the chapel, the old store, the El Portal Market, the old hotel (Yosemite Institute administrative offices), Bagby Station, and other sites and structures related to early industry, homesteading, and tourism in the Merced River corridor. Some of these structures are privately owned or used only as National Park Service or park partner's administrative facilities. Because these structures are not open to the public, they are unlikely to experience adverse effects from visitor use.

The boundary for the El Portal segment of the river in Alternative 3 would be based on the locations of specific ORVs. Zoning for the El Portal corridor under this alternative calls for Park Operations and Administration (3C) north of the river and in existing developed areas south of the river, and Day Use (2C) in the undeveloped areas south of the river. A significant cultural resources area north of the river would be zoned 2C.

The proposed boundary and zoning designations for the El Portal segment would allow additional development or redevelopment within the areas zoned 3C, but the areas zoned 2C along much of the river corridor would substantially limit development potential in El Portal. Increased development north of the river could adversely affect the historic landscape if the new design were incompatible with the character of the landscape. Likewise, additional development could increase the number of visitors, employees, and residents exposed to these resources and therefore increase the likelihood of damage such as vandalism, erosion, and wear and tear.

The areas zoned Discovery (2B) south of the river is characterized by quiet and natural areas. Only limited development would be appropriate in this zone. Because this zoning is restrictive on development and Alternative 1 leaves the area unzoned, Alternative 3 would likely result in minor, beneficial impacts on historic sites, structures, and landscapes when compared to Alternative 1.

The areas zoned Day Use (2C) south of the river would allow for development of trails, restrooms, and picnic areas. The additional development could adversely affect historic sites within the segment due to the increase in visitor contact with these resources. However, the potential actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and 2004 design guidelines. Therefore the adverse effects of new development would likely be local, long term, and negligible to minor. Conversely, if the design is compatible with the historic landscape character and if the new facilities reduce the likelihood of visitor or employee-related damage to historic sites, structures, and landscapes, then site-hardening activities could have a local, long-term, moderate, beneficial effect on these resources.

In general, the El Portal river corridor boundary and management zoning under Alternative 3 would have a local, long-term, moderate, beneficial effect to historic sites, structures, and landscapes when compared to Alternative 1.

Implementation of VERP within the El Portal segment would include monitoring of the indicators identified for areas zoned 2B, 2C, and 3C. Educational measures are expected to result in local, short-and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures, such as limits on activities near the river or reduced activity levels, would benefit these resources by reducing opportunities for visitor or employee-related damage. These measures could result in short-term or long-term, moderate to major, beneficial impacts to historic sites, structures, and landscapes. Site-hardening activities, such as construction of picnic facilities or roadway improvements, could result in adverse effects on historic landscapes if the new design is incompatible with the character of the landscape. However, the potential actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and 2004 design guidelines. Therefore, the adverse effects of new development would likely be local, long term, and negligible to minor. Conversely, if the design is compatible with the historic landscape character and if the new facilities reduce the likelihood of visitor or employee-related damage to historic sites, structures, and landscapes, then site-hardening activities could have a local, long-term, moderate, beneficial effect on these resources.

Overall, local, long-term, minor, adverse impacts and local, short- and long-term, moderate, beneficial impacts on historic sites, structures, and landscapes could occur under Alternative 3. However, negative effects would be reduced in intensity under Alternative 3 by the application of zoning within the larger, revised river corridor boundary (as compared to Alternative 1). The implementation of daily segment limits and VERP could have long-term moderate beneficial impact to historic sites, structures, and landscapes and local, long-term, negligible to minor, adverse impacts, depending on the management action taken.

Impacts in Wawona. Historic sites, structures, and landscapes in Wawona include the Washburn cultural landscape, the Chowchilla Mountain Road, Civilian Conservation Corps structures, the Wawona Covered Bridge, the Wawona Hotel (a National Historic Landmark), and the Pioneer Yosemite History Center. Many relocated, individually listed National Register historic structures comprise the Pioneer Yosemite History Center.

Implementation of daily segment limits for Wawona would be expected to have negligible effects on historic sites, structures, and landscapes in the short term. If future visitor levels in Wawona reached the daily segment limit, park management would take actions to restrict or reduce visitor levels to meet the proposed limits. Visitor use could be decreased by reducing parking, requiring reservations, or limiting overall numbers of visitors into the area through the South Entrance Station. Due to the decreased likelihood of visitor-related damage on historic sites, structures, and landscapes, these measures could have local, long-term, minor to moderate, benefits on these resources compared to the No Action Alternative.

Implementation of the VERP program in Wawona under Alternative 3 would be the same as described under Alternative 2. Educational measures designed to change visitor behaviors in ways that reduce vegetation trampling, riverbank erosion, and social trails, are expected to improve the natural and cultural setting and result in local, short- and long-term, negligible to minor, beneficial effects on historic sites, structures, and landscapes. More restrictive measures, such as limits on activities near the river or reduced activity levels, would benefit these resources by reducing opportunities for visitor-related damage. These measures could result in short-term or long-term, minor to moderate, beneficial impacts to historic sites, structures, and landscapes. Site-hardening activities, such as construction of boardwalks, picnic facilities, or roadway improvements, could result in adverse effects on historic landscapes. Any new design would be compatible with the historic landscape character, and if the new facilities reduce the likelihood of visitor-related damage to historic sites, structures, and landscapes, then site-hardening activities could have a local, long-term, minor to moderate, beneficial effect on these resources.

In the Below Wawona segment, which would be zoned for Undeveloped Open Space (2A+), VERP management to address the number of people and social trails would likely be focused on education and more restrictive measures to reduce visitor levels and restore the natural resources. Site hardening would not be appropriate in this area. Education efforts to limit the number of visitors and reduce impacts to resources are expected to have long-term, negligible to minor, beneficial effects on historic sites, structures, and landscapes. More restrictive measures, such as enforced limits on the number of people accessing the area, would benefit the cultural ORV by decreasing the likelihood of visitor-related damage such as vandalism, erosion, and wear and tear.

Summary of Alternative 3 Impacts. Compliance with existing park policies including the 1999 Programmatic Agreement, Yosemite National Park Design Guidelines, and federal laws such as the National Historic Preservation Act would help ensure that the cultural ORVs in each river segment are being protected and enhanced.

VERP would provide a suite of data to help monitor and preserve historic sites, structures, and landscapes. Under Alternative 3, overall visitor numbers in the future would likely be lower than under Alternatives 1. Segment limits and management actions taken to protect ORVs and other resources would result in less congestion and crowding and less likelihood of visitor-related damage to cultural resources. The improvements to the natural setting and reduced crowding and congestion would likely provide benefits to historic sites, structures, and landscapes within the corridor. If restrictive management actions are required to achieve these natural and social conditions, there would be moderate benefits to these resources due to a reduction of visitor-related damage. The larger river corridor boundary and management zones in El Portal that result in a reduce development potential would have a minor to moderate, beneficial impact compared to Alternative 1.

Overall, the implementation of daily segment limits and a VERP program would result in both long-term, minor to moderate, beneficial impacts on historic sites, structures, and landscapes and potentially long-term, minor, adverse effects on these resources related to increased development in some areas.

Cumulative Impacts

A detailed discussion of impacts from past, present, and future projects is provided under Alternative 1.

Alternative 3 and the cumulative projects within and in the vicinity of Yosemite National Park would result in both long-term, beneficial impacts on historic sites, structures, and landscapes and long-term, adverse effects due to an increase in development.

Past, present, and reasonably foreseeable future cumulative actions could have long-term, beneficial impacts, and long-term, adverse impacts on historic sites, structures and landscapes and the historic component of the cultural ORV within the Merced River Corridor. Overall these cumulative actions in combination with Alternative 3 could have a net long-term, moderate, adverse impact on historic sites, structures, and landscapes within the Merced River corridor.

Impairment

Because adverse impacts to historic sites, structures, and landscapes are negligible to minor, Alternative 3 is not expected to impair the park's historic resources for future generations.

National Historic Preservation Act Section 106 Summary

Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in no adverse effect to historic properties listed in or eligible for listing in the National Register of Historic Places, because the plan does not prescribe specific action. Future actions that are allowed under the proposed alternative would undergo their own environmental review to determine their potential effect on historic properties.

Visitor Experience

Analysis

The following discussion provides an overview of the types of impacts to recreation, interpretation and orientation, visitor services, and wilderness experience that could occur within each segment of the Merced River corridor under Alternative 3. The analysis for the El Portal segment also describes the types of impacts to visitor experience that could occur based on the adoption of a quarter-mile river corridor boundary.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have an adverse effect on the visitor experience. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to the visitor experience associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to the visitor experience are expected to be minor to moderate, and adverse.

Recreation

Analysis

The following discussion provides an overview of the types of impacts to recreation resources that could occur within each segment of the Merced River corridor from implementation of Alternative 3. Effects on recreation from the proposed corridor boundaries and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Recreation ORVs in the Wilderness segment include outstanding opportunities for solitude along the river, primitive and unconfined recreation, and recreational opportunities such as day hiking, backpacking, horseback riding and packing, camping, and the enjoyment of natural river sounds.

Under Alternative 3, user capacity within wilderness areas would be managed under daily daily segment limits (set at existing wilderness trailhead limits), an annual maximum visitor limit, a day use limit on the trail to Half Dome, and the VERP program, in addition to the existing user capacity management policies described under Alternative 1. The annual maximum visitor cap would not be expected to affect wilderness visitor use. The day use limit could result in local, long-term, moderate to major, beneficial effects on the visitor experience for visitors seeking more solitude in the wilderness in areas accessible to day use. The limit would also result in a local, long-term, moderate to major, adverse effect on visitors who may not be able to access Half Dome during peak periods.

Implementation of VERP under Alternative 3 would be the same as under Alternative 2. The impacts would vary depending on the management actions implemented. Management actions that reduce use levels in the wilderness would have local, moderate to major, adverse effects on some visitors, but would likely improve the wilderness experience for other visitors, resulting in local, minor to moderate, beneficial effects.

Overall, Alternative 3 would be expected to protection and enhance the wilderness resources and the solitude of the wilderness experience, as encompassed in the recreation ORVs.

Impacts in Yosemite Valley. Under Alternative 3, the daily segment limits for the Yosemite Valley segment would be set based on the maximum capacity of existing visitor facilities. Park management would manage the number of visitors in the Valley to ensure that the daily segment limits and maximum annual corridorwide visitation limits are not exceeded. If visitor numbers exceeded the limits, management would reduce visitor numbers through entrance station restrictions, day-use permit requirements, or other means. These restrictions would be designed to maintain the spectrum of recreational opportunities encompassed by the recreation ORVs, although there could be limits of the levels of some activities. Restrictions on the number of visitors in the Valley in the long term would likely result in decreased traffic and crowding as compared to the No Action Alternative, and there would be a local, long-term, minor to moderate, beneficial effect on the recreation experience for those visitors who are in the Valley. Implementation of entrance station restrictions or other limits on visitor access to Yosemite Valley would also eliminate some potential visitor access to the Valley and its recreation opportunities, resulting in a local, long-term, moderate to major, adverse effect on recreation.

Alternative 3 would also implement the VERP program and the other user capacity management measures identified under Alternative 2. Since the VERP program under Alternative 3 would be the same as under Alternative 2, the effects would be the same as those described under Alternative 2. Effects would range from beneficial to adverse depending upon the type of management actions implemented in response to VERP. Actions which improve the natural environment without decreasing access would have beneficial effects while more restrictive measures would have adverse effects on access to recreation.

Overall, implementation of the proposed maximum daily segment limits, and the maximum annual visitor limit, with a VERP program that would include implementation of appropriate management actions when required based on monitoring results, is expected to benefit the visitor experience by reducing traffic congestion and crowding, and conserving the natural and cultural environment. The beneficial effects would be expected to be minor to moderate, depending on the management action. The restriction of visitor access and reduced opportunities for some visitors to access recreational opportunities would also, however, result in local, long-term, moderate to major, adverse effects on the visitor experience. Since this alternative would restrict future visitor use levels to the daily segment limits, regardless of the condition of the resources monitored through VERP, the adverse effects on visitor experience are expected to increase relative to Alternative 1.

Impacts in the Gorge. The maximum daily segment limits for the Gorge would be based on the maximum capacity of existing facilities (parking). Park management would manage the number of visitors in the Gorge to ensure that the daily segment limits were not exceeded. If visitor numbers exceed the daily limit, management would reduce visitor numbers through limiting entrance station access or reducing parking availability. Implementation of these limits would result in negligible effects in the short term, since the limit would be set at existing use levels. In the long term, the level of use could be lower than under the No Action Alternative. Since current use levels are currently low and there are few crowding problems, this reduction of use would provide for a local, long-term, negligible, benefit to the recreation experience for users of the gorge. The restrictions would also result in local, long-term, moderate, adverse effects on some visitors due to the decreased access to the area on peak days.

Effects would range from beneficial to adverse depending upon the type of management actions implemented in response to VERP. Actions which improve the natural environment without decreasing access would have beneficial effects while more restrictive measures would have adverse effects on access to recreation. Restrictions implemented under VERP would be designed to maintain the spectrum of recreational opportunities, as encompassed in the recreation ORVs, although levels of some specific activities may be limited.

Overall, implementation of the proposed maximum daily segment limits, and the maximum annual visitor limit, with a VERP program that would include implementation of appropriate management actions when required based on monitoring results, is expected to benefit the visitor experience by reducing traffic congestion and crowding, and conserving the natural and cultural environment. The beneficial effects would be expected to be minor to moderate, depending on the management action. The restriction of visitor access and reduced opportunities for some visitors to access recreational opportunities would also, however, result in local, long-term, moderate to major, adverse effects on the visitor experience. Since this alternative would restrict future visitor use levels to the daily segment limits, regardless of the condition of the resources monitored through VERP, the adverse effects on visitor experience are expected to increase relative to Alternative 1.

Impacts in El Portal. The boundary for the El Portal segment of the river under Alternative 3 would be a quarter-mile. The zoning for the El Portal corridor under Alternative 3 calls for park administrative uses (3C) north of the river, and low-intensity Discovery (2B) for the majority of the undeveloped areas south of the river. Since there are few existing visitor facilities on National Park Service lands in El Portal and visitor use is limited within the corridor, the proposed zoning is not expected to adversely affect recreation within this segment.

The proposed boundary and management zoning for the El Portal segment is likely to result in some additional development or redevelopment within the zone 3C areas. The areas within the corridor that would be zoned 3C would have the potential to be developed as administrative facilities, but only if these facilities can meet the criteria for construction within the river corridor (protection of the ORVs and compliance with other elements of the Merced River Plan). Development of additional administrative facilities would not be expected to adversely affect access to or opportunities for recreation activities, since these areas are not currently used for recreation access. Since there are no existing visitor facilities on National Park Service lands, visitor use is limited within the corridor, and recreational activities in this area are focused on the river itself, the proposed boundary and zoning are expected to have a long-term, local, negligible, adverse effect on access to recreation, the quality of the visitor experience, and the recreation ORVs within this segment.

Implementation of the maximum daily segment limits for El Portal would be expected to have negligible effects on recreation in the short term, since recreation use of this area is limited and the limits are based on maximum capacity of existing facilities. Future growth in recreation use of the area could result in implementation of measures to limit visitor use to the adopted limit. Implementation of limits on visitors using the area for recreation could have local, long-term, minor to moderate, adverse effects on some visitors through reduced access to recreational activities; however, the spectrum of recreational opportunities would be maintained.

As under Alternative 2, implementation of the VERP program under Alternative 3 would be expected to have local, long-term, minor, beneficial effects or local, short- or long-term, minor to moderate, adverse effects on recreation and visitor experience, depending upon the management actions implemented.

Overall, implementation of Alternative 3 would result in more long-term, adverse effects on recreation and visitor experience compared to Alternative 1, due to the additional restrictions on visitor access that would be implemented to limit visitor numbers under the maximum daily segment limits and the annual maximum visitor limit for the corridor.

Impacts in Wawona. Implementation of daily segment limits for Wawona under Alternative 3 would not be expected to result in adverse effects to recreation in the short term. If future visitor use levels in Wawona reached the daily segment limits, management would take actions to restrict or reduce visitor use levels to meet the proposed limits. The spectrum of recreational opportunities would be maintained, while levels of use may be restricted. These measures could have local, long-term, moderate, adverse effects on access to recreational opportunities.

Alternative 3 would implement the VERP program and the other user capacity management measures identified under Alternative 2. Since the VERP program under Alternative 3 would be the same as under Alternative 2, the effects would be the same as those described under Alternative 2. Effects on recreation could be local, long-term, negligible to minor, beneficial effects or local, short- or long-term, minor to moderate, adverse effects on recreation and visitor experience, depending upon the management action.

Overall, implementation of Alternative 3 would likely result in more long-term adverse effects on recreation and visitor experience than Alternative 1, due to the additional restrictions on visitor access that would be implemented to limit visitor numbers to the daily segment limits and maximum annual visitor limits.

Summary of Alternative 3 Impacts. Implementation of daily segment limits and an annual maximum visitor limit for the corridor would be expected to reduce overall visitor numbers in the long term, compared to Alternative 1. This would have a long-term, local, minor to major, adverse effect on access to recreational opportunities in the river corridor, regardless of the condition of the resources. Implementation of additional management actions to address information from VERP monitoring would be expected to result in improvements of natural and social conditions within the corridor. The improvements to the natural setting and reduced crowding and congestion would be expected to provide local, long-term, minor to moderate benefits to recreation and visitor experiences within the corridor. If restrictive management actions are required to achieve these natural and social conditions, however, there would be adverse effects on recreation and visitor experience related to decreased opportunities for recreation. The duration and intensity of these adverse effects would depend upon the duration and extent of the restrictive measures. Any restrictions would be designed to maintain the spectrum of recreation opportunities, although levels of use could be restricted. Overall, the addition of the daily segment limits, maximum annual visitor limits for the corridor, and VERP to the other existing user capacity measures under Alternative 3 would result in more local, long-term, adverse effects on access to recreation opportunities compared to Alternative 1.

Cumulative Impacts

The effects of past, present, and reasonably foreseeable future projects are summarized under Alternative 1. These cumulative projects would have a long-term, negligible to minor, beneficial impact, because the beneficial impacts associated with increased visitor access and expanded recreational opportunities would be partially offset by the adverse impacts associated with the removal of specific recreational opportunities.

Alternative 3 and the cumulative projects would be expected to have both beneficial and adverse long-term cumulative effects on recreation, visitor experience, and the recreation ORVs. The duration and intensity of these adverse effects would depend upon the duration and extent of the restrictive measures, but the incorporation of daily segment limits would likely increase the adverse effects beyond those associated with VERP. Implementation of the daily segment limits and the maximum annual visitor limit would result in future restrictions on visitor use levels and access, regardless of the condition of the resources.

Interpretation and Orientation

Analysis

The following discussion provides an overview of the types of impacts to interpretation and orientation that could occur within each segment of the Merced River corridor under Alternative 3.

Impacts in Wilderness. Segment limits for wilderness areas would be set at current trailhead quota levels and the annual maximum visitor limit for the corridor would not likely affect wilderness use. Therefore, the segment and corridorwide limits would not affect access to or availability of interpretive programs in wilderness areas. The day use limit for Half Dome would also be set at current peak levels and would not likely result in any effects on interpretive programs. Implementation of the proposed user capacity program with VERP in wilderness areas would be the same as described for Alternative 2. This could result in a local, short- or long-term, negligible to minor, adverse effect on visitor experience from reduced access to interpretative programs in wilderness areas as compared to the opportunities under the No Action Alternative.

Impacts in Yosemite Valley. Implementation of daily segment limits and an annual maximum visitor limit for the corridor could result in implementation of measures to limit the number of visitors in the future. This would result in reduced access to orientation and interpretive programs in the Valley, resulting in a local, long-term, minor, adverse effect. Implementation of the VERP program in Yosemite Valley would be the same as described under Alternative 2. Overall, changes in interpretative programs and orientation could result in local, long-term, minor, adverse impacts on visitor experience if restrictions are implemented that reduce visitor access to orientation and interpretive programs as compared to Alternative 1.

Impacts in the Gorge. No interpretive programs are currently offered in the Gorge segment. Implementation of the proposed daily segment limits, the maximum annual corridorwide visitor limit, and the VERP program would not be expected to change this. Therefore, Alternative 3 would not impact interpretation and orientation compared to Alternative 1.

Impacts in El Portal. The proposed corridor boundary and zoning for Alternative 3 includes areas zoned for administrative use (3C) and day use (2C). It is not anticipated that interpretive programs would be provided in 2B or 3C areas. Although the 2C areas would allow for visitor facilities, most are located in areas that are not likely to be developed for visitor facilities. There are currently limited interpretive programs in El Portal, and the proposed boundaries and management zoning would not affect these programs.

Due to the low visitor use of El Portal and the limited interpretive programs, implementation of daily segment limits and an annual maximum visitor limit would not likely affect interpretation and orientation programs in this segment. Implementation of VERP could reduce access if required to address resource conditions. These effects would be expected to be local, long-term, minor and adverse since there are limited programs in the area.

Impacts in Wawona. Implementation of daily segment limits in Wawona and an annual visitor limit for the corridor could result in a decrease in visitor levels in this segment in the long term. Restrictions on visitor levels would restrict access to interpretive and orientation programs, resulting in a local, long- term, minor, adverse effect on visitor experience compared to the No Action Alternative. Implementation of the VERP program in Wawona would be the same as described under Alternative 2. Overall, the impacts to interpretive and orientation programs in Wawona would be expected to be local, long-term, minor, and adverse.

Summary of Alternative 3 Impacts. Alternative 3 could have local, long-term, minor, adverse impacts on visitor experience if visitor limits and VERP management actions reduce visitor access to and availability of interpretation and orientation programs and services.

Cumulative Impacts

The effects of past, present, and reasonably foreseeable future projects are described under Alternative 1. These cumulative projects would have a long-term, minor, beneficial impact, because the beneficial impacts associated with an increase in interpretation and orientation programs and services would only be partially offset by the potential loss of ranger-led hikes in the wilderness.

Alternative 3 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, negligible, adverse cumulative impact because the availability and diversity of interpretation and orientation programs and services would increase through some of the cumulative projects, but Alternative 3 could result in management actions that reduce access to and availability of interpretation and orientation programs and services.

Visitor Services

Analysis

The following discussion provides an overview of the types of impacts to visitor services that could occur within each segment of the Merced River under Alternative 3. Effects on visitor services from the proposed corridor boundary and zoning in El Portal under Alternative 3 are also addressed for the El Portal segment.

Impacts in Wilderness. Since daily segment limits for wilderness areas would be set at existing trailhead quota numbers, the daily segment limits would not affect visitor services in the Wilderness. The maximum annual visitor limit is not expected to affect wilderness users. Implementation of the VERP program under Alternative 3 would be the same as described for Alternative 2. Since wilderness areas currently have low levels of visitor services, Alternative 3 could result in local, short- or long-term, minor, adverse effects on visitor experience through reduced services and opportunities in wilderness areas if VERP standards were not being met.

Impacts in Yosemite Valley. Implementation of daily segment limits in the Valley and a maximum corridorwide annual visitor limit could result in lower visitation levels in the Valley in the future compared to Alternative 1. These levels would be restricted regardless of the condition of resources. Management actions to limit visitor numbers could reduce access to visitor services resulting in a local, long- term, minor to moderate, adverse impact. Implementation of VERP under Alternative 3 would result in the same effects described for Alternative 2. Therefore, the overall impacts of Alternative 3 on provision of and access to visitor services would be expected to be local, long- term, minor to moderate, and adverse.

Impacts in the Gorge. Implementation of daily segment limits within the Gorge segment and a maximum annual visitor limit for the corridor would be expected to result in lower visitor levels in the long term. Since there are few visitor services in the gorge, the effects of the visitor limits would likely be negligible. Implementation of VERP under Alternative 3 would result in the same effects described under Alternative 2. Therefore, Alternative 3 would not be expected to affect provision of and access to visitor services in the Gorge.

Impacts in El Portal. The proposed corridor boundary and zoning for this alternative includes limited areas zoned for day use. Although this zoning would allow for future development of visitor services on National Park Service lands, those areas zoned for day use are not located in areas that are likely to be suitable for day use facilities. The corridor boundary and zoning configuration would not be expected to impact availability of existing visitor services in El Portal.

Implementation of daily segment limits and an annual maximum visitor limit could reduce visitor use levels in the corridor in the long term. However, most visitor services in El Portal are provided by private businesses on private property and would not be impacted by the park's user capacity program. Therefore, implementation of daily segment limits and a VERP program would not affect visitor services available in the El Portal segment.

Impacts in Wawona. Implementation of daily segment limits in Wawona and the maximum annual visitor limit for the corridor would not be expected to result in substantive changes to use levels in the short term. In the long term, visitor levels in Wawona could be lower than levels expected under Alternative 1. The visitor limits would not be expected to result in decreased availability of visitor services in the short term. In the long term, management actions taken to reduce visitor levels could reduce access to visitor services resulting in a local, long-term, minor, adverse effect. Implementation of VERP under Alternative 3 would result in the same effects described for Alternative 2. Therefore, the overall impacts of Alternative 3 on provision of and access to visitor services would be expected to be local, long-term, minor, and adverse.

Summary of Alternative 3 Impacts. Actions taken under Alternative 3 would be expected to result in local, long-term, minor to moderate, adverse impacts on access to and the availability of visitor services. Implementation of daily segment limits and the maximum annual limit, which limit visitor numbers regardless of resource conditions, would likely result in more adverse effects than Alternative 1.

Cumulative Impacts

Effects of past, present, and reasonably foreseeable projects are described under Alternative 1. The cumulative projects would have a long-term, minor to moderate, adverse impact on visitor services due to the overall reduction of overnight accommodations in Yosemite Valley and potential additional restrictions on facilities and activities in wilderness areas. These adverse impacts would be partially offset by improving parking and traffic circulation in Yosemite Valley, rehabilitating and expanding some campgrounds in the park, and expanding lodging opportunities outside the park.

Alternative 3 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor to moderate, adverse impact on visitor services because of the potential reduction of overnight accommodations in Yosemite Valley, additional restrictions in wilderness areas, and the visitor limits implemented under this alternative. This adverse impact would be partially offset by improving parking and traffic circulation within the Valley, rehabilitating and expanding some campgrounds in the park, and expanding lodging opportunities outside the park.

Wilderness Experience

Analysis

The following discussion provides an overview of the types of impacts to the wilderness experience that could occur within the Merced River corridor under Alternative 3.

Under Alternative 3, the National Park Service would adopt daily segment limits, a maximum annual visitor limit for the corridor, and the VERP program. For wilderness areas, the daily segment limits would be set at the existing trailhead quota levels and would not affect the wilderness experience for overnight visitors. The proposed day use limit on the Half Dome trail would likely result in local, long-term, moderate to major, adverse effects on visitors who would not be able to access this area during peak periods. The day use limits would also result in an improved wilderness experience for those visitors who did access the trail during peak periods. This would likely result in a local, long-term, moderate, beneficial effect on wilderness experience for these visitors. The maximum annual visitor limit for the corridor would not likely affect the wilderness experience. Actions taken under VERP could result in local, long-term, adverse or beneficial effects depending on the management actions taken. Therefore, implementation of Alternative 3 would result in local, long-term, moderate, adverse effects on the wilderness experience as compared to Alternative 1 due to the increased adverse effect of the day use limit for the Half Dome trail.

Summary of Alternative 3 Impacts. The effects of Alternative 3, including adoption of daily segment limits, an annual maximum visitor limit, and a day use limit for the Half Dome trail, along with implementation of the VERP program, would be expected to be local, long-term, moderate, and adverse compared to Alternative 1.

Cumulative Impacts

Effects of past, present, and reasonably foreseeable future projects are described under Alternative 1. These cumulative projects would have a long-term, minor, beneficial impact on the wilderness experience, because the wilderness ecosystem would be improved and this benefit would only be partially offset by potential adverse effects of possible additional restrictions on wilderness activities and facilities.

Alternative 3 and the cumulative projects would result in a local, long-term, negligible to minor, beneficial, impact to the wilderness experience, because the beneficial improvements to the wilderness ecosystem would be partially offset by the potential additional restrictions on wilderness uses and the Half Dome visitor limit in this alternative.

Social Resources

Land Use

Analysis

The following discussion provides an overview of the types of impacts to land use that could occur within each segment of the Merced River corridor. The analysis for the El Portal segment also describes the types of impacts to land use that could occur based on the adoption of a quarter-mile river corridor boundary as proposed under this alternative. Alternative 3 would not be expected to result in any changes to land use within the park. Development in El Portal is addressed below.

Impacts in Wilderness. Under Alternative 3, implementation of daily segment limits and the maximum annual visitor limit would not affect land use in wilderness areas. Implementation of the VERP program would be consistent with existing management zoning and existing land uses in the Wilderness segment of the river corridor.

Impacts in Yosemite Valley. Under Alternative 3, implementation of daily segment limits and the maximum annual visitor limit would not affect land use in Yosemite Valley. Implementation of VERP monitoring would be consistent with existing park management zoning designations and land use in the Yosemite Valley segment.

Impacts in the Gorge. Under Alternative 3, implementation of daily segment limits and the maximum annual visitor limit would not affect land use in the Gorge. Implementation of VERP monitoring would be consistent with existing park management zoning designations and land use in the Gorge segment.

Impacts in the El Portal Administrative Site. Under Alternative 3, the El Portal boundary would include a quarter-mile on each side of the river. The river corridor boundary would include 853 acres, of which 323 acres would be zoned Discovery (2B), 131 acres would be zoned Day Use (2C), and the other 399 acres would be zoned Park Operations and Administration (3C). As described under Alternative 2, facilities developed within the river corridor must meet more stringent standards than development outside the corridor. Since Alternative 3 incorporates more of the El Portal area within the boundary, it would likely result in less overall development of residential and administrative facilities in the El Portal area, reducing the potential for adverse effects on land use as compared to Alternative 1. Overall, any potential development would be consistent with existing development in the area and with the adopted management zoning prescriptions.

Implementation of Alternative 3, with daily segment limits, the maximum annual visitor limit, and VERP monitoring, would be consistent with the management zoning as adopted under this alternative.

Impacts to Wawona. Under Alternative 3, implementation of daily segment limits and the maximum annual visitor limit would not affect land use in Wawona. Implementation of VERP monitoring would be consistent with existing park zoning designations and existing land use.

Summary of Alternative 3 Impacts. Under Alternative 3, implementation of a user capacity program with maximum daily segment limits, a maximum annual visitor limit, and VERP monitoring would provide park management with tools to achieve the desired conditions outlined in the management zones. Implementation of Alternative 3 would be consistent with existing park management zone designations and existing land uses. In El Portal, the proposed river corridor boundary and zoning would result in a local, long-term, minor, beneficial effect on land use as compared to Alternative 1.

Cumulative Impacts

The effects of past, present, and reasonably foreseeable projects were described under Alternative 1. Overall, the cumulative projects would be expected to have local, long-term, minor to moderate, adverse effects on land use due to the potential for additional development of residential and administrative uses and a decrease in open space in the El Portal and Wawona areas. The impacts should be offset somewhat by the planning efforts underway on countywide planning and the El Portal Concept Plan.

The cumulative effects of Alternative 3 and the cumulative projects would result in local, long-term, minor, adverse effects on land use within the river corridor.

Transportation

Analysis

The following discussion provides an overview of the types of impacts to transportation conditions associated with Alternative 3. Alternative 3 includes daily segment limits, a maximum annual visitor limit, and a day-use limit on the Half Dome trail, as well as a VERP program. Since transportation resources are affected by peak visitor levels and not annual levels, this analysis focuses on the daily maximum limit levels and VERP. Because transportation services and facilities are not provided in Yosemite wilderness areas, this analysis does not address impacts in the Wilderness segments of the river corridor.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have an adverse effect on transportation. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to transportation associated with redirection of visitors would be short-term, and variable in location and could occur in areas within or adjacent to the park. Therefore, potential impacts to transportation are expected to be minor to moderate, and adverse.

Impacts in Yosemite Valley. Under Alternative 3, the daily maximum daily segment limit for the Yosemite Valley would be set based on existing maximum capacity of visitor facilities. Since this maximum level would likely be close to current peak levels, short-term effects on transportation would be expected to be negligible. The daily segment limits would likely result in lower visitor numbers in the long term compared to Alternative 1, thereby resulting in lower traffic and congestion, and a local, long-term, minor to moderate, beneficial effect on transportation.

Implementation of VERP under Alternative 3 would be the same as discussed under Alternative 2. Long-term transportation impacts would depend on the management actions implemented under the VERP process. In particular, the VERP program will include monitoring of parking demand and capacity, which correlates with traffic congestion. If the VERP monitoring process were to determine that indicators and standards were being violated, the park could implement a range of management actions. Depending on the actions, visitation patterns and the associated traffic volumes and transportation conditions could change. If management actions led to lower levels of visitation or parking and transportation improvements, transportation conditions could be improved.

Overall, implementation of Alternative 3 would also have local, long- term, minor to moderate benefits on congestion and parking in the Valley associated with maximum daily segment limits that restrict future growth in visitor levels and implementation of VERP. The intensity of the benefits would depend on the specific measures implemented under VERP.

Impacts in the Gorge. The maximum daily segment limit for the Gorge segment under Alternative 3 would be based on the maximum capacity of available parking spaces. As discussed above, the limit would not likely affect visitor levels in the short term, but could restrict future growth in visitor levels. Lower future visitor levels would result in local, long-term, minor benefits to transportation in the Gorge, as compared to Alternative 1.

Long-term transportation impacts would depend on the management actions implemented under the VERP process. In particular, the VERP program would include monitoring of parking demand and capacity, which correlates with traffic congestion. If the VERP monitoring process determined that indicators and standards were being violated, the park could implement a range of management actions. Depending on the actions, visitation patterns and the associated traffic volumes and transportation conditions could change. If management actions led to lower levels of visitation or parking and transportation improvements, transportation conditions could be improved.

Overall, implementation of Alternative 3 would also have local, long- term, minor to moderate benefits on congestion and parking in the Gorge segment associated with maximum daily segment limits that restrict future growth in visitor levels and implementation of VERP. The intensity of the benefits would depend on the specific measures implemented under VERP.

Impacts in El Portal. The proposed boundary and management zoning in El Portal would include more area in the corridor boundary. Most areas north of the river would be zoned for administrative use. Although day-visitor parking and employee housing could be constructed in these areas, any development would be required to meet all conditions of the Merced River Plan and the Wild and Scenic Rivers Act. Development of additional employee housing and, potentially, day-visitor parking could result in increased traffic on local roads and park access roads. Development potential under Alternative 3, however, would be less than under Alternative 1, resulting in a local, long-term, negligible, beneficial effect on transportation from development-related effects.

The maximum daily segment limit for the El Portal segment under Alternative 3 would be based on the maximum capacity of available parking spaces. As discussed above, the limit would not likely affect visitor levels in the short term, but could restrict future growth in visitor levels. Lower future visitor levels would result in local, long-term, minor benefits to transportation in the El Portal, as compared to Alternative 1.

Long-term transportation impacts would depend on the management actions implemented under the VERP process. In particular, the VERP program would include monitoring of parking demand and capacity, which correlates with traffic congestion. If the VERP monitoring process determined that indicators and standards were being violated, the park could implement a range of management actions. Depending on the actions, visitation patterns and the associated traffic volumes and transportation conditions could change. If management actions led to lower levels of visitation or parking and transportation improvements, transportation conditions could be improved.

Overall, implementation of Alternative 3 would also have local, long- term, minor to moderate benefits on congestion and parking in El Portal associated with maximum daily segment limits that restrict future growth in visitor levels and implementation of VERP. The intensity of the benefits would depend on the specific measures implemented under VERP.

Impacts in Wawona. The maximum daily segment limit for the Wawona segments under Alternative 3 would be based estimated maximum capacity levels. As discussed above, the limit would not likely affect visitor levels in the short term, but could restrict future growth in visitor levels. Lower future visitor levels would result in local, long-term, minor benefits to transportation in Wawona, as compared to Alternative 1.

Long-term transportation impacts would depend on the management actions implemented under the VERP process. In particular, the VERP program would include monitoring of parking demand and capacity, which correlates with traffic congestion. If the VERP monitoring process determined that indicators and standards were being violated, the park could implement a range of management actions. Depending on the actions, visitation patterns and the associated traffic volumes and transportation conditions could change. If management actions led to lower levels of visitation or parking and transportation improvements, transportation conditions could be improved.

Overall, implementation of Alternative 3 would also have local, long- term, minor to moderate benefits on congestion and parking in Wawona associated with maximum daily segment limits that restrict future growth in visitor levels and implementation of VERP. The intensity of the benefits would depend on the specific measures implemented under VERP.

Summary of Alternative 3 Impacts. Implementation of maximum daily segment limits combined with VERP would be expected to result in local, long-term, minor to moderate, benefits on transportation, compared to Alternative 1. The Alternative 3 daily segment limits would likely result in lower future visitor levels, thus reducing traffic and congestion. The intensity of the benefits associated with implementation of VERP would depend on the specific measures identified.

Cumulative Impacts

The effects on transportation associated with cumulative projects were addressed under Alternative 1. These effects are expected to be local, long-term, minor to moderate, and beneficial. The cumulative effect of Alternative 3 and the other projects would also be expected to be local, long-term, minor to moderate, and beneficial.

Scenic Resources

Analysis

The following discussion provides an overview of the types of impacts to scenic resources that could occur within each segment of the Merced River corridor under Alternative 3.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have a beneficial effect on scenic resources. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to scenic resources associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to scenic resources is expected to be negligible to minor, and beneficial.

Impacts in Wilderness. Scenic ORVs in the Wilderness segments of the Merced River corridor include views from the Merced River and its banks of the exposed bedrock riverbed, Merced Lake and Washburn Lake, the Bunnell Cascade, the confluence of tributaries, a large concentration of granite domes, and the Clark and Cathedral Ranges.

No additional management actions would need to be taken to implement the daily segment limits, because the trailhead quotas for the Wilderness segments would be set at current levels. Implementation of the daily segment limits in the Wilderness segments would have no effect on scenic resources compared to the No Action Alternative.

Implementation of VERP monitoring and management program for the wilderness areas would result in additional monitoring of indicators within the Wilderness segments. VERP wildlife, social, and water quality indicators would be monitored due to the more concentrated uses in these areas.

Indicators have been selected to provide overall information on the health of resources within the Wilderness segments. Management actions associated with achieving indicator standards would not affect the scenic ORVs or visitors' ability to view scenic ORVs in the Wilderness. Therefore, implementation of the VERP program overall is not expected to affect scenic resources and the scenic ORVs.

The combination of daily segment limits with VERP monitoring is expected to have no impact on the scenic resources and the scenic ORVs within the Wilderness segments of the Merced River corridor.

Impacts in Yosemite Valley. The scenic ORVs within Yosemite Valley include views from the Merced River and its banks of waterfalls and water features, rock cliffs, meadows, and forests throughout the Yosemite Valley segment.

The daily segment limits for the Yosemite Valley segment would be set close to existing levels of use. Park management would manage the number of visitors in the Valley to ensure that the daily segment limits were not exceeded. If the number of visitors exceeded the limits, management would take actions to reduce visitor numbers. Management actions could include limiting the number of commercial or regional transit buses, requiring commercial bus reservations, instituting a day-use reservation program, rerouting visitors, or instituting entrance station closures.

The results of these management actions would depend on the management action taken. Since all of the management actions would be aimed at lowering the number of people accessing Yosemite Valley, the local, long-term effect would be negligible and beneficial to visitors' ability to view scenic resources within the Valley. Fewer users would result in decreased traffic and crowding compared to the No Action Alternative.

Additional management actions would be implemented if monitoring of the VERP indicators showed that standards for these indicators were not being met. The effects of these additional management actions within the Valley would vary by the action. Educational measures to change visitor behavior in ways that reduce vegetation trampling, riverbank erosion and water pollution would improve the natural setting and therefore could result in local, short- and long-term, negligible, beneficial effects on scenic resources. More restrictive measures, such as limits on activities near the river, reduced activity levels, or restrictions on automobile or bus access to Yosemite Valley, would benefit the natural setting and reduce traffic congestion, and could result in short- or long-term, beneficial impacts to visitors' ability to observe scenery. Site hardening, such as construction of boardwalks, picnic facilities, or roadway improvements, could result in adverse effects on the natural environment but would be limited to areas designated for higher levels of development and use. New or improved site design would follow Yosemite Valley design guidelines (NPS 2004c). Because these guidelines require consideration of significant views in all new design, site-hardening activities would result in local, long-term, negligible to minor, beneficial effects to scenic resources in these areas.

Overall, implementation of the proposed user capacity program with daily segment limits and the VERP program is expected to have a negligible benefit to scenic resources by reducing traffic congestion and crowding; conserving the natural and cultural environment; and providing better, less crowded, and less obstructed access to valued viewpoints. Where these goals would be achieved through education, site hardening, and other nonrestrictive management actions, the effect on scenic resources would likely be long term, negligible, and beneficial. Management actions that result in long-term, broad-based restrictions on visitor transportation options, types of activities, and levels of use could also have long-term, negligible, beneficial impacts on scenic resources.

Impacts in the Gorge. The scenic ORVs for the Gorge segment of the river corridor include views from the Merced River and its banks of the Cascades, spectacular rapids among giant boulders, Wildcat Fall, Tamarack Creek Fall, the Rostrum, and Elephant Rock.

The daily segment limit for the Gorge segment would be based on existing use levels derived from available parking. Park management would manage the number of visitors in the Gorge segment to ensure that the daily segment limit was not exceeded. If the number of visitors exceeded the limit, management would take actions to reduce visitor numbers. Since access to the Merced River gorge is limited by available parking, park management could reduce use levels by reducing the amount of parking. Management actions could also include instituting a day-use reservation program for entry into the park or closing entrance stations when the limit is reached. These measures would control the overall number of people able to access the Gorge segment.

The results of these management actions would depend on the management action taken. Implementation of the daily segment limit would result in negligible effects in the short term, because the limit would be set at existing use levels. In the long term, the level of use would likely be lower than under the No Action Alternative. Since use levels are currently low and there are few crowding problems in the Gorge segment, a reduction of use would provide a local, long-term, negligible benefit to scenic resources.

In addition to managing visitor numbers within the Gorge segment, additional management actions would be implemented if monitoring of the VERP indicators showed that standards for these indicators were not being met. The effects of these management actions within the Gorge segment would vary by the action. Educational measures are expected to result in local, short- and long-term, negligible, beneficial effects. More restrictive measures, such as limiting activities near the river, reducing activity levels, or restricting automobile or bus access to Yosemite Valley, would benefit the natural setting and reduce traffic congestion, and could result in short- or long-term, beneficial impacts to visitors' ability to observe scenery. The effect of the restrictions would depend on the duration of the restrictions and whether the restrictions were selective in terms of areas and activities or were more broad-based, such as an overall reduction in the number of visitors allowed through the park entrance stations. Short-term, selective restrictions would result in local, short-term, negligible to minor, beneficial effects on visitors' ability to experience scenic resources. Site-hardening activities, such as the construction of boardwalks, picnic facilities, or roadway improvements, could result in some adverse effects on the natural environment, but would be limited to areas designated for higher levels of development and use (zones 2D and 3C). New or improved site design would follow the Yosemite Valley design guidelines. Because these guidelines require consideration of significant views in all new design, site hardening would result in local, long-term, negligible, beneficial effects to scenic resources in these areas.

Overall, the implementation of VERP monitoring and subsequent management actions would have local, long-term, negligible, beneficial impacts on scenic resources from reduced traffic and crowding and reduced impacts to the natural environment. Management actions that achieve these goals through education and site hardening would have long-term, negligible, beneficial effects on scenic resources. Management actions that are more restrictive could have local, short- or long-term, negligible, beneficial effects on scenic resources.

Impacts in El Portal. Scenic resources in the El Portal segment of the river corridor consist of views of the geologic transition between granite and metasedimentary bedrock along the canyon walls and distinct views of Chinquapin Fall.

Under Alternative 3, the boundary for the El Portal segment of the river is a quarter-mile. Zoning for the El Portal segment under this alternative calls for Park Operations and Administration (3C) north of the river, and low-intensity Discovery (2B) for the majority of the undeveloped areas south of the river. The proposed boundary and zoning for the El Portal segment would likely result in additional development or redevelopment within the 3C zone. This increased development north of the river could change the foreground views and decrease visibility of important scenic resources. Any additional development is expected to result in a local, long-term, minor, adverse effect on scenic resources within the El Portal segment. Implementation of the wider river corridor boundary in El Portal would reduce development potential in this area compared to Alternative 1. Therefore, Alternative 3 would result in a local, long-term, minor, beneficial impact to scenic resources compared to Alternative 1.

Implementation of a daily segment limit for El Portal would have negligible effects on scenic resources in the short term because visitor use of this area is limited. Future growth in and use of the El Portal segment could result in measures to restrict visitor use to the adopted limit, such as removing parking areas or closing access to certain areas. Implementation of these types of measures to restrict or reduce use would result in local, long-term, negligible, beneficial effects on scenic resources compared to the No Action Alternative.

Implementation of the VERP program within the El Portal segment would include monitoring of the indicators identified for areas zoned Discovery (2B), Day Use (2C), and Park Operations and Administration (3C).

The effects of management actions would vary by the action. Educating visitors and employees to change their behavior related to activities that could adversely affect vegetation and water quality would likely result in local, long-term, negligible, beneficial effects on scenic resources. More restrictive measures (such as limiting activities near the river or reducing activity levels) would result in a negligible, beneficial effect on scenic resources. The duration and the intensity of this effect would depend on whether the restrictions are short or long term and selective or broad-based. Conversely, these same measures could result in a local, long-term, negligible, adverse effect if they hinder visitors' ability to experience scenic resources. New or improved site design would follow the Yosemite Valley design guidelines. Therefore, site hardening (e.g., the construction of parking or picnic facilities, increased employee housing, or increased development in the town center) could have local, negligible, long-term, adverse effects on scenic resources in this area.

Impacts in Wawona. The scenic ORVs for the Wawona segments include views from the Merced River and its banks of large pothole pools within slickrock cascades, old-growth forest, meadows, Wawona Dome, and continual whitewater cascades in the deep and narrow river canyon below Wawona.

Implementation of a daily segment limit for Wawona is expected to have negligible effects on scenic resources in the short term. If future visitor use levels in Wawona reached the daily segment limit, park management would take actions to restrict or reduce visitor use levels to meet the proposed limit. Visitor use could be decreased by reducing parking, requiring reservations, or limiting the overall number of visitors through the South Entrance Station. These measures could have local, long-term, negligible, beneficial effects on scenic resources compared to the No Action Alternative.

Implementation of the VERP program throughout the Wawona segments would result in management actions to address conditions that do not meet the standards set for each zone. These management actions could range from less restrictive measures, such as education and site hardening, to more restrictive actions to reduce visitor activities or access in certain areas. The intensity of the measures taken would depend on the condition of the resources and the zoning of the area.

The Wawona segments would primarily be zoned for low-intensity visitor use, with very limited areas zoned for higher intensity uses. Therefore, management actions taken in response to VERP monitoring would likely focus on more restrictive measures. Educational efforts in response to monitoring of natural resource and social conditions would result in local, long-term, negligible benefits to scenic resources by improving the natural environment. More restrictive measures, such as restrictions on activities or use levels in various areas, would result in negligible, beneficial effects on scenic resources due to a decrease in development.

In the river corridor below Wawona, which is zoned for Undeveloped Open Space (zone 2A+), VERP management actions would likely focus on education and more restrictive measures to reduce visitor use levels and restore natural resources. Site hardening would not be appropriate in this zone. Measures to reduce the number of visitors and impacts to natural resources would have long-term, negligible to minor, beneficial effects on scenic resources. More restrictive measures, such as enforcing limits on the number of visitors accessing the Below Wawona segment, would benefit the scenic ORVs by creating an improved natural environment.

Summary of Alternative 3 Impacts. Compliance with existing park policies, including the Yosemite Valley design guidelines, would help ensure that the scenic ORVs in the Wilderness, Yosemite Valley, Gorge, and Wawona segments are being protected and enhanced. Implementation of daily segment limits and VERP management actions is expected to improve natural and social conditions within the Merced River corridor. Improvements to the natural setting and reduced crowding and congestion would provide long-term, minor, beneficial impacts on scenic resources within the corridor. Implementation of the wider river corridor boundary in El Portal would reduce development potential in this area compared to Alternative 1. Therefore, Alternative 3 would result in a local, long-term, minor, beneficial impact to scenic resources compared to Alternative 1.

Cumulative Impacts

Cumulative impacts from past, present, and reasonably foreseeable future actions in conjunction with Alternative 3 would be the same as described for Alternative 1. Overall, these cumulative actions, in combination with Alternative 3, could have a net long-term, minor, adverse impact on scenic resources and the scenic ORVs within the Merced River corridor.

Impairment

Alternative 3 is expected to result in long-term, minor, beneficial impacts on scenic resources. Therefore, Alternative 3 would not be expected to impair the scenic ORVs for future generations.

Socioeconomics

Social Environment

Analysis

Under Alternative 3, the park would supplement existing user capacity program elements with corridorwide employee limits and a VERP program. (The social environments would not be affected by the visitor limits.) Social environments within the river corridor could be affected by changes in employee housing in the developed areas and by changes in commute times to park duty stations. Under Alternative 3, the river corridor boundary for the El Portal segment would be a quarter-mile wide.

Impacts in Wilderness. There are limited facilities in wilderness areas, and few employees are stationed in these areas. The corridorwide employee limit would not likely affect the level of employees housed or stationed in wilderness areas. Depending on the management actions taken under VERP, there is a potential for the number of employees in wilderness areas to increase or decrease from current levels depending upon if measures are taken to reduce visitor use or increase enforcement and education. Due to the small number of employees and facilities in wilderness areas, these potential increases or decreases would likely result in a local, long-term, negligible, adverse impact on the social environment in wilderness areas.

Impacts in Yosemite Valley. Implementation of corridorwide employee limits would allow for the reallocation of employees within the corridor to address visitor demands and housing needs. Since the *General Management Plan* calls for a reduction of administrative facilities in Yosemite Valley, employee housing would potentially decrease in the Valley and be redistributed within the corridor. This would result in local, long-term, minor to moderate, beneficial effects on housing in the Valley from reduced crowding, but would also result in local, long-term, minor to moderate, adverse effects related to increased commutes to the Valley from other areas.

Implementation of a VERP program in Yosemite Valley under Alternative 3 would have the same effects described under Alternative 2. The effects of potential management actions in the Valley would vary by the action taken. Actions designed to reallocate employee housing from the Valley could result in a local, long-term, minor to moderate, beneficial effect on the social environment by reducing crowding. Commute times for Valley employees relocated outside the Valley, would increase, resulting in a local, long-term, minor to moderate, adverse effect. Restrictions on the use of areas or on activities in various areas could reduce recreation opportunities for Valley residents. However, because Valley residents have access to a broad range of recreation activities, these restrictions would likely result in a local, long-term, negligible to minor, adverse effect on recreation opportunities.

Overall, implementation of Alternative 3 could result in local, long-term, minor to moderate, beneficial effect on employees remaining housed in the Valley and local, long-term, minor to moderate, adverse effects on employees relocated outside the Valley.

Impacts in El Portal. Implementation of a corridorwide employee limit would allow for reallocation of employee housing from Yosemite Valley to El Portal, as proposed in the *General Management Plan*. An increase in employee housing could result in a local, long-term, minor to moderate, adverse effect on the social environment and community amenities depending upon the amount of housing developed.

VERP management actions could result in restrictions on certain activities within the river corridor in El Portal. As described under Alternative 2, implementation of restrictive management actions in response to VERP monitoring would likely result in local, long-term, negligible to minor, adverse impacts on recreation opportunities and employee commuting options.

The river corridor boundary under Alternative 3 is a quarter-mile wide along each side of the river within the El Portal Administrative Site. Management zoning under Alternative 3 includes areas of 3C zoning north of the river, allowing for some potential development of additional administrative facilities. Alternative 3 would allow for development of new or expanded employee residential areas in El Portal outside the river corridor, and within the corridor where the development would meet the standards of the Wild and Scenic Rivers Act. Since Alternative 3 includes more area inside the corridor than Alternative 1, it would likely result in less development in El Portal, compared to Alternative 1. Since this alternative would likely result in less development, the potential for adverse effects on community amenities would be reduced compared to Alternative 1, resulting in a local, long-term, minor to moderate, beneficial effect.

Impacts in Wawona. Implementation of a corridorwide employee limit would allow for reallocation of employee housing from Yosemite Valley to Wawona, as proposed in the *General Management Plan*. An increase in employee housing could result in a local, long-term, minor to moderate, adverse effect on the social environment and community amenities depending upon the amount of housing developed.

VERP management actions could result in restrictions on certain activities within the river corridor in Wawona. As described under Alternative 2, implementation of restrictive management actions in response to VERP monitoring would likely result in local, long-term, negligible to minor, adverse impacts on recreation opportunities and employee commuting options.

Summary of Alternative 3 Impacts. Implementation of corridorwide employee limits would allow for relocation of employee housing from Yosemite Valley to other developed areas. This would result in local, long-term, minor to moderate, benefits on employees that remained housed in the Valley. It would also result in local, long-term, moderate to major, adverse effects on employees relocated from the Valley and on the social environments of El Portal and Wawona due to increased populations. The intensity of the effects would depend on the level of employee housing developed in each segment. The boundary and management zoning in El Portal under Alternative 3 would likely result in less housing development in El Portal, as compared to Alternative 1, resulting in a local, long-term, minor to moderate, beneficial effect. Implementation of VERP monitoring could result in management actions that would reduce or relocate employee housing within the river corridor. These changes could result in local, long-term, minor to moderate, adverse effects on the social environment through population changes and increased commutes for relocated employees. The intensity of the effects would depend on the amount of housing relocated and where replacement housing is sited. Potential adverse effects on recreation opportunities within the corridor communities would be negligible to minor.

Cumulative Impact

The effects of the cumulative projects on the social environment are discussed under Alternative 1.

The cumulative projects would have a local, long-term, minor to moderate, adverse effect on the social environments within the corridor due to decreases in housing and social amenities near housing and increases in commuting time in Yosemite Valley, and increases in housing in El Portal and Wawona. The impact intensity of any planning projects would depend on the extent to which the plan's recommendations are implemented.

Alternative 3 and the cumulative projects would have a local, long-term, minor to moderate, cumulative, adverse effect on the social environments within the corridor due to increases in employee housing in El Portal and Wawona and increased commuting times to Yosemite Valley. The cumulative effects associated with Alternative 3 would be partially offset, as compared to Alternative 1, due to the reduced potential for development in El Portal. The cumulative impact intensity would depend on the extent to which the cumulative projects' recommendations are implemented.

Visitor Populations

Analysis

Alternative 3 would implement maximum daily segment limits, a maximum annual visitor limit, a day use limit on hikers to Half Dome, and VERP monitoring in addition to other existing park policies regarding visitor use within the river corridor.

Proposed daily segment limits would be set near estimated existing visitor levels for each segment in the park. Therefore, impacts to visitor populations in the short term area expected to be negligible. In the long term, visitor demand is expected to increase, and future visitor levels could be constrained by the daily segment limits or by the maximum annual limit, as compared to Alternative 1. In addition, the day use limit on the trail to Half Dome could result in a decrease in visitor populations in the most popular wilderness area of the park. The effect of the proposed limits on visitor populations is expected to be regional, long-term, minor to major, and adverse compared to Alternative 1.

Implementation of VERP under Alternative 3 would have the same effects described under Alternative 2. The effects on visitor populations from management actions taken under VERP would be negligible for less restrictive measures, such as visitor education or limitations on activities in specific areas. The potential effects on visitor populations from temporary restrictions during peak periods would be local, short term, minor to moderate, and adverse. Permanent limits or restrictions are likely to result in local, long-term, moderate to major, adverse effects on visitor populations compared to Alternative 1.

Summary of Alternative 3 Impacts. Alternative 3 could result in local, long-term, minor to major, adverse effects resulting from restrictions on visitor populations related to visitor limits and implementation of VERP.

Cumulative Impacts

The effects of the cumulative projects on visitor populations are discussed under Alternative 1.

The cumulative projects would have a regional, long-term, negligible to minor, adverse impact on visitor populations due to the overall reduction in overnight accommodations in Yosemite Valley. This adverse effect would be offset somewhat by additional overnight accommodations being constructed outside the park.

Alternative 3 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a regional, long-term, minor to major, adverse cumulative impact on visitor populations due to the proposed visitor limits. Additional restrictions implemented under VERP, if needed, would increase the adverse effects.

Regional Economy

Analysis

Implementation of maximum daily segment limits, the maximum annual limit, and the day use limits for hikers to Half Dome would likely have negligible effects in the short term, since these limits are set at peak current estimated use. These limits would likely result in lower visitor levels in the park in the long term compared to Alternative 1. These lower visitation levels would likely result in lower visitor spending in communities in the region. Effects on individual area economies could be moderate, but the overall effect on the regional economy is expected to be minor. Therefore, daily segment limits could result in regional, long-term, minor, adverse effects on the regional economy.

VERP management actions that affect visitor populations, such as restrictions on specific activities, on the use of specific areas, or on the levels of day use within the river corridor would have the most effect on the regional population. The effect on the regional economy would differ depending upon the management actions taken. Temporary visitor restrictions or restrictions on specific activities within the corridor would likely result in local, short-term, negligible to minor, beneficial effects if visitors temporarily displaced from the park spend more time in regional communities. Longer term restrictions on levels of visitor use would likely result in long-term, regional, minor, adverse effects if visitors are restrictions were placed on day use levels and therefore fewer visitors attempted to reach the park. The intensity of the effects would depend on the duration and extent of any potential restrictions or use level reductions. Other management actions that might be taken to address VERP standards include the expansion of visitor facilities or site hardening in areas zoned for intensive visitor use. These actions could result in regional, long-term, negligible, beneficial effects on the regional economy through increased construction spending and employment.

Summary of Alternative 3 Impacts. Implementation of visitor limits under Alternative 3 would likely result in regional, long-term, minor, adverse effects on the regional economy. Management actions implemented under VERP could have regional, long-term, negligible to minor, benefits to regional, long-term, minor, adverse effects depending upon the measure implemented. The effect on the regional economy would likely be long-term, minor, and adverse compared to Alternative 1.

Cumulative Impacts

The effects of the cumulative projects on the regional economy are described under Alternative 1. The cumulative projects would have a short-term, minor, beneficial effect on the regional economy, primarily due to construction spending and employment. The cumulative projects would have a long-term, negligible to minor, beneficial effect on the regional economy due to increased regional output and employment from increased overnight accommodations in the park and in local communities.

Alternative 3 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor, adverse cumulative impact on the regional economy due to the potential for long-term reductions in visitor populations compared to Alternative 1, which would reduce visitor spending in the region. This impact on the regional economy would be long term, minor, and adverse. These effects would be offset to some degree by an increase in construction employment and spending, which would have a short-term, negligible to minor, beneficial effect on the regional economy.

Concessioner

Analysis

Implementation of daily segment limits, maximum annual corridorwide visitation limits, and a day use limit for Half Dome under Alternative 3 would likely result in lower visitor levels in the park in the future compared to Alternative 1. Visitor levels would not decrease in the short term, as the limits are set at current estimated peak use levels, but future growth in visitor levels would be constrained. Since concessioner operations are directly related to visitor numbers in the park, impacts on the concessioner from the daily segment limits are expected to be local, long-term, minor to moderate, and adverse.

Implementation of VERP under Alternative 3 would have the same effects on the concessioner as described under Alternative 2. Measures taken to address VERP standards could include restrictions on specific activities (rafting, horseback riding, etc.), on the use of specific areas, or on the levels of day use within the river corridor. These restrictions could result in local, long-term, adverse effects on concessioner operations. Other management actions that might be taken to address VERP standards include the expansion of visitor facilities in areas zoned for intensive visitor use. These actions could result in local, long-term, beneficial effects on the concessioner.

Summary of Alternative 3 Impacts. Under Alternative 3, visitor limits would result in lower visitor levels in the long term, compared to Alternative 1, resulting in a local, long-term, minor to moderate, adverse effect. Management actions taken to address VERP standards could result in restrictions on specific activities or more general restrictions on visitor levels, resulting in local, long-term, adverse effects on concessioner operations. The intensity of the effect would vary depending on the extent of the restrictions imposed. Management actions that increase visitor services could result in local, long-term, beneficial effects on concessioner operations.

Cumulative Impacts

The effects on concessioner operations from past, present and reasonably foreseeable future actions were described under Alternative 1.

The cumulative projects would have a local, long-term, minor to moderate, adverse impact on the primary park concessioner associated with locating new employee housing outside of the Valley and potential additional restrictions on activities and facilities in wilderness areas. The adverse effect would be partially offset by increased accommodations being developed in Curry Village and at Yosemite Lodge. The impact intensity of any planning projects would depend on the extent to which the *Yosemite Valley Plan's* recommendations are implemented.

Alternative 3 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor to moderate, adverse impact on the concessioner associated with locating new employee housing outside of the Valley, potential additional restrictions on activities and facilities in wilderness areas, implementation of visitor limits, and the potential for additional restrictions on visitor levels and activities in Yosemite Valley. These effects might be offset somewhat by actions that increase visitor services within some areas of the Valley.

Park Operations and Facilities

Analysis

The National Park Service is committed to the implementation of a User Capacity Management Program to protect and enhance the Merced River corridor's Outstandingly Remarkable Values. The park initiated monitoring associated with the VERP component of this program in 2004, a copy of the 2004 Annual Report is available on the park's website (www.nps.gov/yose/planning/ucmp.htm) and has secured funding for the continuation of this program through fiscal year 2008. In addition, the park has established a VERP Coordinator position and has retained a team of technical experts to assist with the development, refinement, and implementation of this program. The National Park Service is committed to implementation of this program beyond 2008 to fully comply with Wild and Scenic River's Act requirements and to achieve the goals and objectives of protecting and enhancing the Merced River corridor's Outstandingly Remarkable Values.

The following discussion provides an overview of the types of impacts to park operations, infrastructure, facilities, and energy consumption that could occur within each segment of the Merced River corridor from implementation of daily segment limits with VERP under Alternative 3. Effects on park operations from the revised corridor boundaries and zoning in El Portal are also addressed for the El Portal segment.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have an adverse effect on park operations. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to park operations associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to park operations are expected to be moderate, and adverse. Redirection of visitors could involve park staff from the Visitor and Resource Protection, Facility Maintenance, Business and Revenue Management and Interpretation and Orientation divisions during traffic management activities and get coordination with local communities and media outlets.

Impacts in Wilderness. Alternative 3 would implement daily segment limits with the VERP program in the Wilderness segments, which would include the monitoring of indicators in various management zones (see table II-5). These indicators would be monitored as an additional element of ongoing ranger patrols and other existing park operations activities in wilderness areas such as WIMS. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in the Wilderness segments.

The additional VERP monitoring, reporting of results to the public, and the potential management actions in Wilderness segments of the river corridor would likely increase park staff workloads. However, given the seasonal nature of visitation to wilderness areas and the limited number of wilderness visitors as a result of the existing trailhead quota system, this increase in staff workload is expected to result in a long-term, minor, adverse impact to park operations.

Wilderness areas would continue to be managed through the trailhead quota system, which has been operational for over 25 years. Therefore, it is not expected that additional park staff or new facilities would be necessary under Alternative 3.

As discussed in Chapter III, Alternative 3 calls for a day-use limit of 800 visitors per day in Little Yosemite Valley. In order to enforce this limit, park operations would be required to control access to this area by issuing day-use permits. Currently, park operations issues approximately 50 overnight permits for wilderness areas and no day-use permits. Issuing day-use permits for Little Yosemite Valley under this alternative would represent a long-term, major, adverse impact associated with wilderness permitting and enforcement operations.

Impacts in Yosemite Valley. Implementing daily segment limits with VERP in Yosemite Valley would include the monitoring of indicators in various management zones. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in the Valley segment.

Alternative 3 would require park management to monitor the number of visitors and/or vehicles entering and exiting the Valley and to implement management actions if the daily segment limit is exceeded. It is expected that the daily segment limits would primarily involve enforcing facility and parking capacities during periods of peak use (summer and some holidays weekends); however, this alternative would likely require additional park staff and facilities to conduct the monitoring and implement appropriate management actions.

The additional VERP monitoring, reporting of results to the public, and the potential management actions combined with implementing a daily segment limit for the Valley would likely increase park staff workloads. It is expected that this increase in workloads would represent an overall long-term, minor to moderate, adverse impact to park operations, mostly during the summer when visitation is highest.

Impacts in the Gorge. Implementation of daily segment limits with VERP in the Gorge segment would include the monitoring of indicators in various management zones. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in the Gorge segment.

The Gorge segment has limited visitor and other park facilities. The additional VERP monitoring, reporting of results to the public, and the potential management actions in the Gorge segment under Alternative 3 would likely increase park staff workloads. The implementation of a daily segment limit for the Gorge segment would require additional efforts by park staff to monitor and implement management actions if the limit is exceeded. However, because there is limited visitor use during most of the year, any additional effort would typically occur during periods of high use (summer and some holiday weekends). Therefore, this increase in workloads would likely result in an overall long-term, minor, adverse impact to park operations in the Gorge segment of the river corridor.

Impacts in El Portal. Implementation of Alternative 3 in the El Portal segment would include the monitoring of indicators in various management zones. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in the El Portal segment.

The additional VERP monitoring, reporting of results to the public, and the potential management actions combined with implementing a daily segment limit for the El Portal segment would likely increase park staff workloads, resulting in an overall long-term, negligible to minor, adverse impact to park operations.

Under Alternative 3, the quarter-mile river boundary and management zoning in El Portal would provide approximately 399 acres zoned as Park Operations and Administration (3C). The remaining acreage in this segment would be zoned either 2B (323 acres) or 2C (131 acres). The National Park Service would be required to protect and enhance ORVs located in this segment in accordance with the Wild and Scenic Rivers Act. However, the area zoned 3C in Alternative 3 allows some flexibility within the river corridor for park management to relocate utilities, facilities, and services to El Portal that are currently within park boundaries. Therefore, the river corridor boundary and zoning under this alternative would result in an overall long-term, minor to moderate, beneficial impact to park operations.

The implementation of a daily segment limit for the El Portal segment would require additional efforts by park staff to monitor and implement management actions if the limit is exceeded. Any additional effort required to implement management actions (such as restricted access policies) would typically occur during periods of high use (summer and some holiday weekends). Therefore, this increase in park staff workloads would likely result in an overall long-term, minor, adverse impact to park operations.

Impacts in Wawona. Implementation of daily segment limits with VERP in the Wawona segments under park jurisdiction would include the monitoring of indicators in various management zones.

If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in the Wawona segments.

Additional VERP monitoring, reporting of results to the public, and potential management actions in the Wawona area under Alternative 3 would likely increase park staff workloads, resulting in an overall long-term, minor, adverse impact to park operations.

The implementation of a daily segment limit for the Wawona segments would require additional efforts by park staff to monitor and implement management actions if the limit is exceeded. Any additional effort required to implement management actions would typically occur during periods of high use (summer and some holiday weekends). Therefore, this increase in park staff workloads would likely result in an overall long-term, minor, adverse impact to park operations

Park Infrastructure and Facilities

Impacts in Wilderness and the Gorge. Alternative 3 would not require changes to, or the need for, any new park infrastructure and facilities. Therefore, this alternative would not affect park infrastructure and facilities in the Wilderness and Gorge segments.

Impacts in Yosemite Valley, El Portal, and Wawona. Implementing daily segment limits with VERP under Alternative 3 could require that traffic check points and/or additional traffic monitoring equipment be put in place, particularly during periods of high use (summer and some holiday weekends). It is expected that these actions would result in a long-term, minor to moderate, adverse impact to park infrastructure and facilities, depending on the type and nature of the additional monitoring facilities.

In addition employee housing could increase in these segments, resulting in a long-term, minor, adverse impact to park infrastructure and facilities, primarily associated with additional building repair and maintenance requirements.

The quarter-mile river boundary and management zoning in El Portal under Alternative 3 would provide approximately 399 acres zoned as Park Operations and Administration (3C). The remaining acreage would be zoned either 2B (323 acres) or 2C (131 acres). There would be minimal, if any, suitable areas outside the river boundary for park infrastructure and facilities. The National Park Service would be required to protect and enhance ORVs located within the river corridor in accordance with Wild and Scenic Rivers Act. However, the area zoned 3C under Alternative 3 would provide park management with the flexibility to relocate utilities, facilities, and services to El Portal that are currently within park boundaries, which would require the removal of some infrastructure and facilities in Yosemite Valley, the design and construction of new facilities in the El Portal Administrative Site, and the removal of decommissioned facilities. These actions would represent a long-term, minor, beneficial impact to park infrastructure and facilities. However, the additional acreage within the river corridor boundary provided under Alternative 3 would likely result in an overall long-term, minor to moderate, adverse impact to park infrastructure and facilities due to the larger area contained within the corridor boundary and the restrictions that are part of the zoning requirements.

The daily segment limit in El Portal would require additional efforts by park staff to monitor and implement management actions if the limit is exceeded (over and above efforts required for VERP implementation). Any additional effort to implement management actions would typically occur during periods of high use (summer and some holiday weekends). However, this increase in monitoring would likely result in a long-term, negligible to minor, adverse impact to park facilities and infrastructure.

Energy Consumption

Impacts in Wilderness, Yosemite Valley, Gorge, El Portal, and Wawona. Implementation of daily segment limits with VERP under Alternative 3 is not expected to substantially increase or decrease the amount or types of energy consumed in the river corridor segments compared to Alternative 1. However, the addition of employee housing on a corridorwide basis in the El Portal, Yosemite Valley, and Wawona segments would require an increase in overall energy consumption, resulting in a long-term, minor, adverse impact compared to Alternative 1.

An overall long-term, minor, beneficial impact to energy consumption would occur related to vehicle use, as gasoline and diesel fuel consumption is expected to decline in the future due to improved fuel economy and the increased use of alternative fuels.

Summary of Alternative 3 Impacts. Implementation of daily segment limits with VERP in the Wilderness, Yosemite Valley, Gorge, El Portal, and Wawona segments in addition to day-use limits in Little Yosemite Valley would require changes to and increase the need for new park infrastructure and facilities. Therefore, Alternative 3 would result in long-term, minor to major, adverse impacts to park operations and park infrastructure and facilities.

In El Portal, the river boundary and zoning under this alternative would result in an overall long-term, moderate, adverse impact to park operations and an overall long-term, minor to moderate, beneficial impact to park infrastructure and facilities.

Compared to Alternative 1, Alternative 3 would not increase the amount of energy consumed in the river corridor segments associated with increased employee housing within the river corridor, resulting in an overall long-term, minor, adverse impact with respect to energy consumption. However, gasoline and diesel fuel consumption associated with vehicle use is expected to decline in the future because of improved fuel economy and an increased use of alternative fuels.

Cumulative Impacts

The cumulative effects to park operations from past, present, and foreseeable future actions would be the same as described for Alternative 1. Overall, these cumulative actions, in combination with Alternative 3, could have a net long-term, minor, beneficial effect on park operations in the Merced River corridor.

Unavoidable Adverse Impacts

The following discussion identifies unavoidable adverse impacts to resources associated with implementation of Alternative 3, which consists of an established maximum daily limit for each segment of the river, a annual corridorwide limit on visitation, and implementation of the VERP program (as presented in Alternative 2). For the purposes of this document, these impacts have been identified as being unavoidable, moderate to major, and adverse.

No impacts associated with the implementation of Alternative 3 have been identified as being unavoidable, moderate to major, and adverse to natural and cultural resources. However, unavoidable adverse impacts to the visitor experience, recreation and park operations could occur if more restrictive management actions were taken to ensure that the ORVs are protected and enhanced. Unavoidable adverse impacts could result if visitors were limited in their ability to freely move about within the segment, or restricted from entering the corridor. In addition, unavoidable adverse impacts could occur to park operations as a result of the need for additional staff and resources necessary to adequately enforce more restrictive management actions.

Irreversible and Irretrievable Commitments of Resources

This section identifies any resources that would be lost either temporarily or permanently as a result of Alternative 3. Alternative 3 consists of an established maximum daily limit for each segment of the river, a annual corridorwide limit on visitation, and implementation of the VERP program (as presented in Alternative 2).

Relocating existing facilities and/or the development of new facilities in El Portal would result in the expenditure of energy to relocate or develop the facility. In addition, relocating existing facilities and/or construction of new facilities would involve an irreversible commitment of construction-related materials, such as concrete, asphalt, wood, and metal.

Similar to Alternatives 1 and 2, energy consumption in the park will continue into the future, resulting in an irreversible and irretrievable commitment of energy sources. However, overall energy consumption is expected to decrease with time as the park converts to more efficient types of equipment, and fleet vehicle turnover occurs resulting in the use of more technically advanced and energy-efficient vehicles.

Relationship of Short-Term Uses of the Environment and Long-Term Productivity

The river corridor and management zoning associated with Alternative 3 for El Portal would allow for development of park administrative facilities within 339 acres of the 853 acres within the corridor (primarily north of the river). Potential development would occur in a manner which protects the ORVs within this management zone; however, these actions could temporarily adversely effect resources during construction. Once completed, the relocated and/or newly constructed facilities would have a long-term benefit to park operations.

Responsiveness of Alternative 3 to the Ninth Circuit Court of Appeals' Direction on the Merced River Plan

The Ninth Circuit Court of Appeals directed the National Park Service to revise the Merced River Plan to address user capacity and to draw the boundaries in the El Portal segment in a manner that protects its ORVs. In addition, the District Court for the Eastern District of California directed the National Park Service to address how the Merced River Plan would amend the 1980 *General Management Plan*.

User Capacity

In addressing user capacity, the Ninth Circuit Court of Appeals specifically directed the National Park Service to "adopt specific limits on user capacity" and that "such limits describe an actual level of visitor use that will not adversely impact the Merced's ORVs."

Alternative 3 includes each of the specific measurable limits on types and levels of use that are included within Alternative 1 (with the exception of the *General Management Plan* visitor capacities), as well as a daily maximum visitor limit by segment, a maximum daily employee limit by corridor, and a maximum annual visitation limit for the river segment, in addition to implementation of the VERP program. These daily segment limits would amend the existing daily visitor capacity limits adopted in the *General Management Plan.*

Management of Wilderness segments would continue under the existing wilderness trailhead quota system (1,280 overnight visitors in Yosemite wilderness areas) and WIMS, with the addition of the VERP program. Under Alternative 3, the National Park Service would also implement a day use limit for hikers on the trail to Half Dome. This limit would be set at 800, which represents an estimate of current peak day use of this trail.

The daily maximum visitor limit by segment under Alternative 3 would limit visitor numbers in each segment. Visitor numbers would be monitored based on parking and traffic data in Yosemite Valley, and based on surveys of parking during peak periods in other areas. Visitor numbers would be limited to 16,680 day visitors in Yosemite Valley and 7,699 overnight visitors, for a total daily limit of 24,379. The daily segment limit for the Gorge would be 2,958 and for El Portal would be 1,144. These daily limits address only day visitors because there are no overnight facilities on National Park Service lands in these segments. The maximum daily visitor limit for Wawona would include 2,839 day visitors and 897 overnight visitors, for a segment total of 3,736. These segment numbers would amend the visitor numbers for developed areas currently adopted in the *General Management Plan.*

The maximum annual visitor limit of 5.32 million for the river corridor would be set at a level that ensures that the maximum daily limits would not be met on most days of the year. The corridorwide limit on employees would include a limit of 1,969 employees housed in the corridor and include 703 nonresident employees who commute to a work station in the corridor.

Under Alternative 3, the National Park Service would also implement a VERP program. Under the VERP program, the National Park Service has adopted a host of indicators (measured variables) and standards (measured values) that reflect the qualitative conditions for the management zones in quantitative form. The standards have been set at levels designed to protect and enhance ORVs (see table II-5). The standards are scientifically measurable limits, and the standards will be measured through a monitoring program designed for each specific indicator. The standards provide clear, documented triggers for management action. If a standard is being met, management action is not required. If conditions are declining (but have not yet fallen below a set standard), management action could be taken to improve the condition and forestall continued decline. If monitoring indicates that conditions do not meet established standards, management action must be taken. Table II-3 presents a list of the types of management actions that can be taken to address conditions documented through the VERP program. VERP data would be used to ensure that the adopted limits are adequate to protect and enhance the ORVs. If adopted standards are not being met, visitor levels could be restricted beyond the adopted limits described above.

Alternative 3 provides specific measurable limits on daily and annual visitor numbers and on employees within the corridor. In addition, the VERP program included in this alternative, along with the existing user capacity measures from the No Action Alternative, will provide an adequate array of specific, measurable limits on types and levels of use to ensure that the river's ORVs are being protected and enhanced. As a result, this alternative complies with the Court direction requiring specific, measurable limits on user capacity.

El Portal Boundary

The Court directed that the National Park Service "redetermine the river area boundaries at El Portal" and that these boundaries "must be drawn so as to protect and enhance the ORVs causing that area to be included within the Wild and Scenic River System." In response to this direction from the court, the National Park Service gathered data on ORVs in El Portal, and used this data to inform the width of the boundaries and the zoning applied within those boundaries.

In El Portal, Alternative 3 proposes a quarter-mile river corridor boundary. This wide boundary would result in a similar corridor width to the other river segments on National Park Service lands. The proposed zoning under this alternative would allow development of park administrative facilities within the corridor (in selected areas primarily north of the river), if development can be completed in a manner which protects the ORVs. Undeveloped areas south of the river are primarily zoned 2B (Discovery). This places substantial limits on the types of development that could occur there. Park administrative uses and most visitor facilities could not be developed in 2B areas.

The additional data gathered on the location of ORVs together with the more restrictive zoning across a larger portion of the El Portal Administrative Site provide for the protection of ORVs. Further, all facility development proposed within the El Portal Administrative Site would undergo environmental compliance review, which would require the proposed development to be consistent with all of the elements of the Merced River Plan, including the protection and enhancement of ORVs.

The proposed boundary under Alternative 3 meets the Court direction to redraw the boundary so as to protect the ORVs for this segment of the river.

Amendments to the 1980 *General Management Plan*

The Wild and Scenic Rivers Act requires the managing agencies to prepare comprehensive management plans for the river and its immediate environment. The Merced River Plan, as revised by this document, provides direction on these issues for the 81 miles of the Merced Wild and Scenic River under the jurisdiction of the National Park Service.

Congress further authorized the National Park Service to prepare its management plan for the river by making appropriate revisions to the park's 1980 *General Management Plan* (16 USC 1274[a][62]). The Wild and Scenic Rivers Act generally provides that river management plans "shall be coordinated with and may be incorporated into resource management planning for affected adjacent Federal lands" (16 USC 1274).

While it is not the policy of the National Park Service retroactively to revise existing plans, Section 1274(a)(62) of the Wild and Scenic Rivers Act requires that the *General Management Plan* be revised to meet the requirements of section 1274(b). Accordingly, the Merced River Plan adopted in November 2000 resulted in the following amendments to the *General Management Plan*. The Merced River Plan's management zoning, River Protection Overlay, river corridor boundaries (with the exception of the El Portal segment) and classifications, and the ORVs revise the *General Management Plan* by establishing more detailed land-use prescriptions that must be applied in future site-specific planning. The Merced River Plan's Section 7 determination process and is a tool that augments the goals of the *General Management Plan*. If selected, this alternative further revises the *General Management Plan* by adopting new boundaries and management zoning for the El Portal area and by adopting a VERP program. No development or use of park lands in the areas within the river corridor shall be undertaken that is inconsistent with the Wild and Scenic Rivers Act designation of the Merced River, or that is inconsistent with the Merced River Plan, as revised by the Revised Merced River Plan/SEIS.

General Management Plan Goals

The *General Management Plan* establishes five broad goals for managing Yosemite National Park (NPS 1980a, pp. 1-4). Although the *General Management Plan* is over 20 years old, its goals are still valid today and apply to the management of the Merced River corridor under the Merced River Plan. The Merced River Plan and this revision work in concert with the goals set forth in the *General Management Plan*, and outline an additional set of specific goals for management of the Merced Wild and Scenic River (MRP pp. 23-24). The Merced River Plan's five goals were developed to further the policy established by the Wild and Scenic Rivers Act, namely to preserve designated rivers in their free-flowing condition, and protect and enhance the river's ORVs. The five defining goals of the *General Management Plan* and the five goals of the Merced River Plan are intertwined, and no one goal can be emphasized to the complete exclusion of the others.

General Management Plan Management Objectives

The *General Management Plan* sets forth a number of Management Objectives that guide resource management, visitor use, and park operations (NPS 1980a, pp. 5-10). The elements of the Merced River Plan, including the revisions made by this alternative, provide an added level of detailed guidance to park managers on how to achieve management objectives for the park. Those elements are boundaries, classifications, protection of ORVs, Section 7 determination process, River Protection Overlay, management zoning, and VERP. For example, projects within each river segment or must protect and enhance ORVs and be consistent with the other elements of the Merced River Plan. Projects adjacent to the river corridor must protect ORVs, and depending on location, may need to undergo a Section 7 review if they affect the bed or banks of the river.

General Management Plan Land Management Zoning

The *General Management Plan* (GMP pp. 10-13) specifies several land management zones, including a Development Zone. The management zones described in the Merced River Plan and the management zones proposed for the El Portal segment for Alternative 3 as illustrated in figure III-3, replace the Management Zoning Plan of the *General Management Plan* for those areas within the Merced Wild and Scenic River corridor boundaries. Zoning of areas outside the river corridor boundary remains unchanged; however, development and uses in areas adjacent to the river corridor must be protective of ORVs, as provided for in the Merced River Plan.

General Management Plan Visitor Use

When the *General Management Plan* was developed in 1980, the estimated visitor capacity of Yosemite Valley was 26,406 per day. As shown in table II-5, the *General Management Plan* called for these visitation levels to be reduced to 18,241 per day through relocation of facilities from Yosemite Valley. Implementation of daily segment limits and a corridorwide annual corridorwide visitation limit as shown in table III-8 would amend the visitor capacity goals of the *General*

Management Plan by increasing the day visitation level to 24,379 and by placing an annual visitation limit of 5.32 million visitors. In addition, Alternative 3 increases employee housing levels above *General Management Plan* proposed levels by 10%. Adoption of this alternative would amend the long-term visitor capacity goals adopted in the *General Management Plan*.

In addition, the VERP program has the ability to reduce visitation levels below the proposed daily segment and annual corridorwide limits. If data collected as a result of monitoring show that the conditions of Outstandingly Remarkable Values and the visitor experience are exceeding set standards, appropriate management actions (which could include reduced visitation levels) would be taken to reduce visitation levels below the limits proposed in Alternative 3.

General Management Plan Developed Area Plans

The *General Management Plan* (GMP pp. 31-59) contains Developed Area Plans for areas within and adjacent to the river corridor. Development Concepts for areas within the river corridor must comply with the management elements of the Merced River Plan, (boundaries, classifications, protection of ORVs, Section 7 determination process, River Protection Overlay, management zoning, and the park's user capacity management program). In the case of El Portal, the new boundaries and management zoning for this alternative would amend the *General Management Plan*'s development concept for El Portal. To the extent that any Development Concept is less restrictive than the Merced River Plan, the Merced River Plan as revised by this plan controls. Actions adjacent to the river corridor but outside of the river boundary must also protect ORVs.

Table V-4 provides a summary of how this alternative affects the ORVs for each segment of the Merced River corridor.

Table V-4
Effect of Alternative 3 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 3 on the ORVs
MAIN STEM MERCED RIVER SEGMENTS		
1. Wilderness	*Scientific* – These segments of the river corridor constitute a highly significant scientific resource because the watershed is largely within designated Wilderness in Yosemite National Park.	*Scientific* – Alternative 3 would not affect the amount of the watershed which is within designated Wilderness. Alternative 3 would continue use of the trailhead quota system, along with implementation of VERP, to manage visitor use in designated Wilderness. These measures would protect the natural, cultural and wilderness values and ensure that the river corridor continues to be a scientific resource.
	Scenic – This segment includes views from the river and its banks of the glaciated river canyon, exposed bedrock riverbed, Merced Lake and Washburn Lake, the Bunnell Cascade, the confluence of tributaries, a large concentration of granite domes, and the Clark and Cathedral Ranges.	*Scenic* – Implementation of Alternative 3 would not affect the scenic views of the canyon, the riverbed, cascades, or rock formations from the river and its banks.
	Geologic Processes/Conditions – This segment traverses a U-shaped, glacially carved canyon separated by cascades and soda springs below Washburn Lake.	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 3.
	Recreation – This segment provides outstanding opportunities for solitude along the river, with primitive and unconfined recreation. There is a spectrum of levels of recreational use. River-related recreational opportunities include day hiking, backpacking, horseback riding and packing, camping, and enjoyment of natural river sounds. Untrailed tributaries provide enhanced opportunities for solitude.	*Recreation* – Under Alternative 3, visitor use of wilderness areas would continue to be managed under the existing trailhead quota system along with VERP Under Alternative 3, VERP would protect the opportunities for solitude by tracking visitor encounters and taking management actions to reduce encounters, as needed. A spectrum of river-related recreational opportunities would continue to be available to wilderness visitors.
	Biological – This segment includes a nearly full range of intact Sierran riverine environments; high-quality riparian, meadow, and aquatic habitats (such as the meadow at Washburn Lake), and special-status species such as mountain yellow-legged frog.	*Biological* – Under Alternative 3, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quotas, WIMS, etc.) and through VERP. Implementation of these measures would protect the biological resources from visitor use-related impacts.
	Cultural – This segment includes portions of a prehistoric trans-Sierra route in use for thousands of years and many prehistoric sites. There are many historic resources such as homestead sites, trails, river crossings, High Sierra Camp sites, and structures	*Cultural* – Under Alternative 3, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quotas, WIMS, etc.) and through VERP. Implementation of these measures would protect cultural resources from visitor use-related impacts
	Hydrologic Processes – The segment is characterized by a free-flowing river and excellent water quality. The river gradient drops from 13,000 to 6,000 feet in elevation. There are examples of natural conditions, including glacial remnants, a logjam in Little Yosemite Valley that is hundreds of years old, and numerous cascades.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character or its gradient, glacial remnants or cascades. Water quality in wilderness areas would be protected under Alternative 3 through existing limits on visitor use in wilderness and through implementation of VERP with monitoring of water quality conditions and management action taken as needed to address any adverse change in conditions.
Main Stem-Wilderness Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Wilderness segment by managing development or uses in wilderness areas that would adversely affect the segment's ORVs.

Table V-4
Effect of Alternative 3 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 3 on the ORVs
2 Yosemite Valley	*Scenic* – This segment provides magnificent views from the river and its banks of waterfalls (Nevada, Vernal, Illilouette, Yosemite, Sentinel, Ribbon, Bridalveil, and Silver Strand), rock cliffs (Half Dome, North Dome/Washington Column, Glacier Point, Yosemite Point/Lost Arrow Spire, Sentinel Rock, Three Brothers, Cathedral Rock, and El Capitan), and meadows (Stoneman, Ahwahnee, Cook's, Sentinel, Leidig, El Capitan, and Bridalveil). There is a scenic interface of river, rock, meadow, and forest throughout the segment.	*Scenic* – Implementation of Alternative 3 would not affect the scenic views of waterfalls and rock cliffs from the river and its banks. Implementation of Alternative 3 would protect and enhance the scenic views of meadows through daily segment limits limiting visitor use in the Valley and implementation of management actions under VERP, as needed, to address visitor-related impacts in meadows.
	Geologic Processes/Conditions – This segment contains a classic, glaciated, U-shaped valley, providing important examples of a mature meandering river; hanging valleys such as Yosemite and Bridalveil Creeks; and evidence of glaciation (e.g., moraines below El Capitan and Bridalveil Meadows).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 3.
	Recreation – This segment offers opportunities to experience a spectrum of river-related recreational activities, from nature study and sightseeing to hiking. Yosemite Valley is one of the premier outdoor recreation areas in the world.	*Recreation* – Implementation of Alternative 3 would protect and enhance recreation in the Valley through management of visitor use levels through daily segment limits, and management actions taken under VERP, as needed, to address visitor experience conditions. Visitors would continue to have access to a spectrum of river-related recreational opportunities.
	Biological – Riparian areas and low-elevation meadows are the most productive communities in Yosemite Valley. The high quality and large extent of riparian, wetland, and other riverine areas provide rich habitat for a diversity of river-related species, including special-status species, neotropical migrant songbirds, and numerous bat species.	*Biological* – Implementation of Alternative 3 would protect and enhance low-elevation meadows, wetlands, riparian areas and other riverine areas through management of visitor use levels through daily segment limits, and implementation of management actions under VERP, as needed, to address visitor-related impacts in sensitive areas.
	Cultural – This segment contains evidence of thousands of years of human occupation reflected in a large number of archeological sites and continuing traditional use today. Nationally significant historic resources are found here, such as designed landscapes and developed areas, historic buildings, and circulation systems (trails, roads, and bridges) that provide visitor access to the sublime views of natural features that are culturally valuable.	*Cultural* – Implementation of Alternative 3 would protect and enhance cultural resources through management of visitor use levels through daily segment limits, and implementation of management actions under VERP, as needed, to address visitor-related impacts on cultural resources.
	Hydrologic Processes – This segment is characterized by a meandering river, world-renowned waterfalls, an active flood regime, oxbows, unique wetlands, and fluvial processes.	*Hydrologic Processes* – Visitor use would not affect the Valley's spectacular waterfalls or the river's meandering character, flood regime, or fluvial processes. Implementation of Alternative 3 would protect and enhance wetlands through management of visitor use levels through daily segment limits and implementation of management actions under VERP, as needed, to address visitor-related impacts on wetland areas.
Yosemite Valley Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Yosemite Valley segment by managing development or uses that would adversely affect the segment's ORVs.
3. Gorge[a]	*Scenic* – This segment provides views from the river and its banks of the Cascades, spectacular rapids among giant boulders, Wildcat Fall, Tamarack Creek Fall, the Rostrum, and Elephant Rock.	*Scenic* – Implementation of Alternative 3 would not affect the scenic views of the Cascades, rapids, waterfalls, or rock formations from the river and its banks.
	Geologic Processes/Conditions – This segment is characterized by a classic V-shaped river gorge with a continuous steep gradient	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 3.

Table V-4
Effect of Alternative 3 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 3 on the ORVs
	Recreation – This segment provides a spectrum of river-related recreational opportunities, such as picnicking, fishing, photography, and sightseeing.	*Recreation* – Implementation of Alternative 3 would protect and enhance recreation in the Gorge by managing visitor use levels through daily segment limits and implementing management actions under VERP, as needed, to address visitor experience conditions. Visitors would continue to have access to a spectrum of recreational opportunities.
	Biological – This segment is characterized by diverse riparian areas and associated special-status species that are largely intact and almost entirely undisturbed by humans.	*Biological* – Implementation of Alternative 3 would protect and enhance the diverse riparian areas and their associated special-status species by managing visitor use levels through daily segment limits and implementing specific management actions under VERP, as needed, to address visitor-related impacts on riparian areas and related species.
	Cultural – This segment contains cultural resources, including prehistoric sites and historic sites and structures such as those relating to historic engineering projects.	*Cultural* – Implementation of Alternative 3 would protect and enhance cultural resources by managing visitor use levels through daily segment limits, and by implementing management actions under VERP, as needed, to address visitor-related impacts.
	Hydrologic Processes – This segment is characterized by exceptionally steep gradients (2,000-foot elevation drop in approximately 6 miles).	*Hydrologic Processes* – These hydrologic processes are not sensitive to visitor use impacts, and would not be affected by Alternative 3.
Gorge Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Gorge segment by managing development or uses that would adversely affect the segment's ORVs.
4 El Portal	*Geologic Processes/Conditions* – This segment contains a transition from igneous to metasedimentary rocks (metasedimentary rocks are among the oldest in the Sierra Nevada).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, or to the proposed corridor boundary and management zoning for El Portal, and would not be affected by Alternative 3.
	Recreation – This segment provides a range of river-related recreational opportunities, in particular whitewater rafting and kayaking (class III to V) and fishing.	*Recreation* – Implementation of Alternative 3 would protect and enhance recreation in El Portal through adoption of daily segment limits to manage visitor use levels in El Portal and implementation of specific management actions, as needed, to address visitor experience conditions. The proposed El Portal boundary and the management zoning proposed would not affect access to the spectrum of recreational opportunities.
	Biological – This segment contains riverine habitats such as riparian woodlands and associated federal and state special-status species, including Tompkin's sedge and Valley elderberry longhorn beetle and its critical habitat (elderberry shrub). Expanses of north-facing habitat allow unlimited access to the riparian zone for wildlife species	*Biological* – Implementation of Alternative 3 would protect and enhance these biological resources through adoption of daily segment limits to manage visitor use levels in El Portal, implementation of specific management actions taken under VERP, as needed, to address visitor-related impacts, and implementation of the proposed boundary and zoning.
	Cultural – This segment contains some of the oldest archeological sites in the Yosemite area, as well as many historic Indian villages and traditional gathering places. River-related historic resources include structures related to early tourism and industrial development.	*Cultural* – Implementation of Alternative 3 would protect and enhance cultural resources through implementation of a boundary that incorporates cultural resources within a quarter-mile of the river. In addition, use of daily segment limits to manage visitor use levels and implementation of management actions under VERP, as needed, to address visitor-related impacts, would protect and enhance cultural resources.
	Hydrologic Processes – This segment is characterized by seasonally continuous rapids	*Hydrologic Processes* – These hydrologic processes are not sensitive to visitor use impacts and would not be affected by Alternative 3.

Table V-4
Effect of Alternative 3 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 3 on the ORVs
El Portal Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the El Portal segment by managing development or uses that would adversely affect the ORVs of the segment
SOUTH FORK MERCED RIVER SEGMENTS		
5 Wilderness	*Scientific* – These segments of the river corridor constitute a highly significant scientific resource because the watershed is largely within designated Wilderness in Yosemite National Park.	*Scientific* – Alternative 3 would not affect the amount of the watershed which is within designated Wilderness. Alternative 3 would continue use of the trailhead quota system, along with implementation of VERP, to manage visitor use in designated Wilderness. This would protect the natural, cultural, and wilderness values and ensure that the river corridor continues to be a scientific resource.
	Scenic – This segment provides views from the river and its banks of unique river features, including large pothole pools within slickrock cascades, old growth forest and meadows.	*Scenic* – Implementation of Alternative 3 would not affect the scenic views of pothole pools within slickrock cascades or old growth forest. Under Alternative 3, daily segment limits would limit visitor use of wilderness areas based on existing wilderness trailhead quotas and through VERP. Implementation of these measures would protect meadows and other sensitive areas from visitor use-related impacts.
	Geologic Processes/Conditions – This segment is characterized by glaciated valleys in the high country and V-shaped canyons above Wawona Moraine meadows and soda springs above Gravelly Ford are also unique, river-related geologic features	*Geologic Processes/Conditions* – Most of these geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 3. Under Alternative 3, daily segment limits would limits visitor use of wilderness areas based on existing trailhead quotas, and through VERP. Implementation of these measures would protect meadows and other sensitive areas from visitor use-related impacts.
	Recreation – This segment provides outstanding opportunities for river-related solitude, enjoyment of natural river sounds, and primitive and unconfined recreation This segment of the river is predominantly without trails, with the exception of four bridgeless trail crossings in the upper reaches of the segment.	*Recreation* – Under Alternative 3, visitor use of wilderness areas would continue to be managed under the existing trailhead quota system along with VERP. VERP would protect the opportunities for solitude by tracking visitor encounters and taking management actions to reduce encounters, as needed. Visitors would continue to have access to outstanding river-related recreational opportunities.
	Biological – This segment includes a nearly full range of riverine environments typical of the Sierra Nevada. Examples of river-related federal and state special-status species include the Wawona riffle beetle and mountain yellow-legged frog.	*Biological* – Under Alternative 3, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quotas, WIMS, etc.) and through VERP. Implementation of these measures would protect the riverine communities and special-status species from visitor use-related impacts
	Cultural – This segment includes river-related prehistoric sites and resources and reflects historic stock use and cavalry activities.	*Cultural* – Under Alternative 3, visitor use of wilderness areas would continue to be managed under existing wilderness management programs (trailhead quotas, WIMS, etc.) and through VERP. Implementation of these measures would protect cultural resources from visitor use-related impacts.

Table V-4
Effect of Alternative 3 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 3 on the ORVs
	Hydrologic Processes – This segment is characterized by a free-flowing river and excellent water quality.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character. Water quality in wilderness areas would be protected under Alternative 3 through daily segment limits that are based on existing trailhead quotas and that limit visitor use in wilderness. In addition, VERP would include monitoring of water quality conditions and management action taken as needed to address any adverse change in conditions.
South Fork-Wilderness Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the South Fork Wilderness segment by managing development or uses that would adversely affect the segment's ORVs.
6. Impoundment[b]	*Scenic* – This segment provides views from the river and its banks of the river and Wawona Dome.	*Scenic* – Implementation of Alternative 3 would not affect the scenic views of the river or Wawona Dome.
	Hydrologic Processes – This segment has excellent water quality.	*Hydrologic Processes* – Water quality would be protected under Alternative 3 through implementation of daily segment limits and VERP, which would include monitoring of water quality conditions and management action taken as needed to address any adverse change in conditions.
Impoundment Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Impoundment segment by managing development or uses that would adversely affect the segment's ORVs.
7. Wawona	*Scenic* – This segment provides views from the river and its banks of Wawona Dome.	*Scenic* – Implementation of Alternative 3 would not affect the scenic views of the river or Wawona Dome.
	Recreation – This segment offers opportunities to experience a spectrum of river-related recreational activities, from nature study and photography to hiking.	*Recreation* – Implementation of Alternative 3 would protect and enhance recreation in Wawona through adoption of daily segment limits to limit visitor use and implementation of management actions under VERP, as needed, to address visitor experience conditions. Visitors would continue to have access to a spectrum of river-related recreation opportunities.
	Biological – This segment contains a diversity of river-related species, wetlands, and riparian habitats. There are federal and state special-status species in this segment, including the Wawona riffle beetle.	*Biological* – Implementation of Alternative 3 would protect and enhance wetlands, riparian habitats, and special-status species through adoption of daily segment limits to limit visitor use levels and management actions taken under VERP, as needed, to address visitor-related impacts to sensitive vegetation or species.
	Cultural - This segment contains evidence of thousands of years of human occupation, including numerous prehistoric and historic Indian villages, historic sites, structures, and landscape features related to tourism, early Army and National Park Service administration, and homesteading.	*Cultural* – Implementation of Alternative 3 would protect and enhance cultural resources through adoption of daily segment limits to limit visitor use levels and implementation of management actions under VERP, as needed, to address visitor-related impacts on cultural resources.

Table V-4
Effect of Alternative 3 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 3 on the ORVs
Wawona Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Wawona segment by managing development or uses that would adversely affect the segment's ORVs.
8 Below Wawona	*Scenic* – This segment provides views from the river and its banks of continual whitewater cascades in the deep and narrow river canyon in a untrailed, undisturbed environment.	*Scenic* – Implementation of Alternative 3 would not affect the scenic views of whitewater cascades or untrailed, undisturbed environment.
	Geologic Processes/Conditions – This segment contains a transition from Paleozoic Era igneous to Cretaceous Period metasedimentary rocks (metasedimentary rocks are among the oldest in the Sierra Nevada).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 3.
	Recreation – This segment provides outstanding opportunities for river-related solitude, enjoyment of natural river sounds, and primitive and unconfined recreation in an untrailed, undisturbed environment. River-related recreational opportunities include hiking, fishing, and whitewater kayaking.	*Recreation* – Implementation of Alternative 3 would protect and enhance recreation in the Wawona through adoption of daily segment limits to limit visitor use levels, and implementation of management actions under VERP, as needed, to address visitor experience conditions Visitors would continue to have access to outstanding river-related recreational opportunities.
	Biological – This segment is characterized by diverse riparian areas that are intact and largely undisturbed by humans. River-related federal and state special-status species in this segment include the Wawona riffle beetle.	*Biological* – Implementation of Alternative 3 would protect riparian areas and special-status species through adoption of daily segment limits to limit visitor use levels, and implementation of management actions under VERP, as needed, to address visitor-related impacts in sensitive areas.
	Cultural – This segment contains archeological sites and historic resources such as trail segments representing early cavalry activity.	*Cultural* – Implementation of Alternative 3 would protect and enhance cultural resources through adoption of daily segment limits to limit visitor use levels and implementation of management actions under VERP, as needed, to address visitor-related impacts on cultural resources.
	Hydrologic Processes – This segment is characterized by a free-flowing river with continual whitewater cascades.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character and whitewater cascades.
Below Wawona-Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Below Wawona segment by managing development or uses that would adversely affect the segment's ORVs.

NOTES

a The Cascades Diversion Dam was removed in 2004 The segment that was formerly designated as 3a has been combined with the segment formally designated 3b and this entire area forms segment 3

b The impoundment would become part of segment 7, Wawona, if an alternative water source for the area was secured and the impoundment was removed

Alternative 4: VERP with Management Zone Limits

The environmental consequences analysis for this alternative addresses elements of the user capacity program for the entire Merced River corridor and the river corridor boundary as well as associated management zone prescriptions for the El Portal segment specific to Alternative 4. It does not provide an analysis of impacts that may be associated with elements of the park's existing user capacity programs as identified in Alternative 1. Similarly, this analysis does not address other existing management elements for the Merced River corridor that were previously described and analyzed in the Merced River Plan/FEIS.

Natural Resources

Geology, Geohazards, and Soils

Analysis

The following discussion provides an overview of the types of impacts that could occur under Alternative 4 with respect to rockfall hazards, seismic hazards, and soils.

Rockfall Hazards. Under Alternative 4, rockfall hazards would remain essentially the same as described for Alternative 1, with the possible exception that (1) established user limits under management zone limits could result in fewer visitors being exposed to rockfall hazards in certain areas of the river corridor and (2) management actions taken in response to indicators unrelated to rockfall hazard under the VERP program with management zone limits could reduce the number of users exposed to rockfall hazards in some areas. However, the effects of either of these potential exceptions on rockfall hazard impacts would be negligible. Existing park policies regarding geohazards would continue to be implemented, and, in the near term, visitation levels would be similar to existing levels under Alternative 1. In addition to current management programs and policies, the management zone limits and VERP program implemented under Alternative 4 provide for management actions that would be triggered to achieve or maintain established standards. Some of these management actions would have the effect of limiting users in some areas. This would, in turn, result in somewhat fewer users exposed to rockfall hazards, and therefore would be a minor, beneficial effect of this alternative.

Seismic Hazards. Potential seismic hazards in the Merced River corridor would be the same under Alternative 4 as described for Alternative 1.

As described for Alternative 1, current park policies regarding geologic hazards would continue to be implemented. The VERP program and management zone limits under Alternative 4, in addition to current management programs and policies, provide for specific user limits and management actions that would be triggered to achieve or maintain established standards. The combination of management zone limits and VERP management actions would have the effect of limiting users in some areas. This would, in turn, result in fewer users exposed to earthquake ground shaking hazards, and therefore would be a minor, beneficial effect of this alternative.

Impacts to Soils. Under Alternative 4, as under Alternatives 1, 2 and 3, soils along most of the river corridor would remain relatively undisturbed and uncompacted. The VERP program component of Alternative 4 would be the same as described under Alternative 2. Although only one of these indicators is explicitly concerned with soil erosion, the indicators related to intensity of visitor use and effects of visitor use on vegetation also reflect impacts on soils, and the standard associated with each indicator would provide a management tool that also could protect soils from excess compaction and erosion. Similarly, management zone limits would help prevent erosion or compaction impacts by concentrating visitor use in some areas. Until the VERP program is fully operational, it might not be apparent what effect management zone limits have on the frequency with which management actions would be triggered by VERP monitoring.

Management actions associated with the redirection of visitors from compacted soils in sensitive areas and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Under Alternative 4, users could continue to affect soils by contributing to erosion, soil compaction, and removal of surface soils. Excessive surface water runoff or loss of protective vegetation cover could cause erosion. Compaction of native soils could occur through concentrated visitor use in localized areas or excessive vehicle traffic in unpaved areas. In the long term, compared to Alternative 1, Alternative 4 would reduce adverse impacts to soils within the river corridor.

The boundary for the El Portal segment of the river under Alternative 4 is based on the location of the ORVs. The zoning under Alternative 4 is the most restrictive of the alternatives for the El Portal segment of the river. The area south of the river and west of the Abbieville levee would be zoned Discovery (2B), except for portions of the Trailer Village/Abbieville area, which would be zoned for Park Operations and Administration (3C). East of the levee, the area south of the river eastward to the El Portal Administrative Site boundary would be zoned Open Space (2A). The area north of the river and east of Crane Creek would be zoned Discovery (2B), except for existing developed areas at Railroad Flat, Rancheria Flat, Old El Portal, and the undeveloped Middle Road area, which would be zoned Park Operations and Administration (3C). Because much of the area that would be zoned Park Operations and Administration (3C) is already developed, only limited future construction of administrative facilities would occur under this alternative. As with Alternative 1, however, any future construction of administration facilities that would occur under this boundary and zoning could cause erosion of exposed soil. Temporary construction-related erosion could occur during periods of rain while soil is exposed, and prior to the site restoration and cleanup phases of future projects. As described under Alternative 1, impacts associated with construction-period soil erosion and sedimentation would be mitigated through mitigation measures described in Appendix B and would result in a local, short-term, minor adverse impact. Long-term soil degradation would be minimal due to erosion controls and the intermittent nature of the grading activities. Therefore, relative to Alternative 1, Alternative 4 would have similar effects on soil erosion from future construction activities at the El Portal Administrative Site. Open Space (2A) zoning to the El Portal Administrative Site boundary for most of the area south of the river would reduce impacts related to soil erosion and compaction compared with Alternative 1. Implementation of the VERP program and management zone limits, in conjunction with the proposed El Portal boundary and zoning, would ensure that management actions would be taken to achieve or maintain established standards with respect to trails, riverbank erosion, vegetation, and other indicators. Thus, Alternative 4 would result in local, long-term, minor, beneficial impact on soil resources.

Summary of Alternative 4 Impacts. In the short term, impacts related to rockfall and seismic hazards would be unchanged from Alternative 1 because the number of users exposed to these hazards would be approximately the same. Compared to Alternative 1, Alternative 4 would have a minor, beneficial impact on public safety associated with seismic hazards in the long-term. Compared to Alternative 1, Alternative 4 would have similar effects on soil erosion from future construction at the El Portal Administrative Site. However, efforts to protect biological and recreation ORVs through implementation of the VERP program, including management actions taken to achieve the identified standards, and application of specified user limits in different management zones of the river would have a long-term, minor, beneficial impact on soil resources. The combined adverse and beneficial impacts to soil resources under Alternative 4, compared with Alternative 1, would be long term, minor, and beneficial.

Alternative 4 would continue to enhance and protect the identified geologic processes/conditions ORVs within the individual river segments.

Cumulative Impacts

Cumulative impacts related to geological resources, geohazards, and soil resources under Alternative 4 would be the same as described for Alternative 1. Although rockfall and earthquakes are unpredictable and unavoidable by nature, rockfall and earthquake hazards under Alternative 4 and the cumulative projects would result in a local, long-term, minor, beneficial impact to public safety in Yosemite National Park and the El Portal Administrative Site. The beneficial impact would be due to the smaller increase in long-term visitation levels under management zone limits and implementation of the VERP program and to efforts by the National Park Service to relocate critical facilities outside the talus and rockfall shadow zones, to avoid construction of new facilities in these hazard areas, and to conduct appropriate geotechnical studies prior to construction of facilities on soils susceptible to seismic ground shaking. The cumulative projects, in combination with Alternative 4, would result in a net regional, long-term, minor, beneficial impact on soil resources.

Impairment

Compared with Alternative 1, Alternative 4 would have a local, long-term, minor, beneficial impact on geologic resources and soils. Therefore, Alternative 4 would not impair geologic resources for future generations.

Hydrology, Floodplains, and Water Quality

Analysis

The following discussion provides an overview of the types of impacts to hydrology, floodplains, and water quality that could occur within each segment of the Merced River corridor under Alternative 4.

Management actions associated with the redirection of visitors from floodplains and adjacent areas and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. The hydrologic processes ORV in the Wilderness segments (both the main stem and South Fork segments) of the river is characterized the river's free-flowing condition and excellent water quality. The ORV description also notes the river gradient, the natural conditions (e.g., glacial remnants, a logjam in Little Yosemite Valley), and numerous cascades. Of the qualities described in the ORV, most are relatively insensitive to user-related impacts, with the exception of water quality. Water quality in Wilderness segments is considered to be excellent.

User capacity within wilderness areas of Yosemite National Park (including those portions within the Wilderness segments) is addressed through the trailhead quota system and monitoring of wilderness resource conditions. Similar to Alternatives 2 and 3, implementation of the VERP program for the Wilderness segments would result in additional monitoring of indicators within Wilderness management areas. VERP indicators to be monitored in wilderness zones are listed in table II-5.

Indicators have been selected to provide overall information on the health of resources within the wilderness areas. Information on the numbers of people recreating within the river corridor, and the River Protection Overlay in particular, can provide indirect information on the potential for increased erosion and sedimentation. Water quality monitoring would help determine the effects of visitor use on water quality in areas zoned Designated Overnight (1D). The water quality standard for this area includes nondegradation of fecal coliform (which must also meet the state standard for recreational contact), nutrients (compounds of nitrogen and phosphorous), and total petroleum hydrocarbons. If these water quality standards are not met, management actions would be implemented to improve water quality parameters to a level that meets the established standard and protects and enhances the hydrologic processes ORV.

The removal of up to 3,000 gallons of water per day from the Merced River to support functions at the Merced Lake High Sierra Camp during the summer (when this camp is open to the public) represents a negligible impact to the river's hydrologic processes at or downstream of the point of withdrawal. This negligible impact would be due to the small daily withdrawal volume compared to daily flow volumes in this segment of the river corridor.

The VERP program under Alternative 4 would be the same as described under Alternatives 2 and 3. Educational efforts would be expected to result in local, short- and long-term, negligible to minor, beneficial impacts on hydrology and water quality. More restrictive measures, such as the reduction of trailhead quotas or restrictions on stock use, could have beneficial effects due to reduced trampling of vegetation by people and stock, reduced soil compaction, and reduced waste loads. These actions would be expected to result in local, long-term, minor to moderate, beneficial impacts on hydrology and water quality. Finally, measures taken to close and/or restore areas would be expected to result in local, long-term, minor to moderate, beneficial effects on water resources associated with restoration of vegetative cover, reduced soil compaction, and reduced erosion.

In wilderness areas, few structures are permitted to be constructed, and Alternative 4 would not affect the floodplain or its ability to accommodate flood flow.

VERP monitoring in conjunction with actively managing the number of people entering the different management zones within the Wilderness segments of the river corridor would provide an additional level of protection for the hydrologic processes ORV. If VERP monitoring indicates that the hydrologic processes ORV is being protected and enhanced, it is expected that the park management would maintain the trailhead quota system as it is currently being implemented. However, if VERP monitoring indicates that the hydrologic ORV is not being protected and enhanced, then management actions would be implemented to reduce the number of people allowed to enter wilderness (i.e., reduce the trailhead quotas as needed) to an appropriate level until subsequent monitoring indicates that the hydrologic ORV is being protected and enhanced. Under no circumstances would the National Park Service be able to increase the existing trailhead quota for wilderness areas, regardless of the monitoring results within each management zone.

Actively managing the number of visitors allowed into each management zone within the Wilderness segments of the river corridor would provide park management with the tools to ensure that the hydrologic processes ORV would be protected and enhanced. The continued implementation of the existing trailhead quota system is expected to result in local, long-term, negligible to minor, beneficial impacts on hydrology, water quality, and the hydrologic processes ORV.

Impacts in Yosemite Valley. The hydrologic processes ORV in Yosemite Valley include the river's meandering character, world-class waterfalls, an active flood regime, oxbows, unique wetlands, and fluvial processes. Many of these qualities are insensitive to user-related impacts and would be more directly affected by development within the floodplain. User-related impacts could affect wetlands and other vegetation within the river corridor, which could result in the loss of vegetative cover, and increased erosion and sedimentation. In addition, visitor use of the river and use of camping and parking areas near the river could result in increased water pollution through stormwater runoff and other means.

The VERP program under Alternative 4 would be the same as described under Alternatives 2 and 3. Educational measures designed to change visitor behaviors in ways that reduce vegetation trampling, riverbank erosion, and water pollution is expected to result in local, short- and long-term, negligible to minor, beneficial effects. More restrictive measures would reduce the loss of vegetative cover, soil compaction, soil erosion, and water pollution, resulting in local, short- and long-term, minor benefits to hydrology and water quality. Closure and restoration of riparian areas is expected to result in local, long-term, minor to moderate, benefits to hydrology and water quality. Site-hardening activities could have local, short-term, adverse effects related to soil disturbance, soil compaction, and erosion and sedimentation associated with construction activities. The long-term effects associated with boardwalks is expected to be local, minor to moderate, and beneficial due to reduced trampling in sensitive vegetated areas and reduced impacts to surface and groundwater hydrology related to the creation of social trails, compacted soils, and trampled vegetation in riverside areas. Construction of picnic areas or other day-use facilities is also expected to reduce ongoing trampling and water pollution, but could have long-term effects related to soil compaction and vegetative losses. Thus, the long-term benefits of these facilities on water resources is expected to be negligible to minor. Floodplains and their ability to accommodate flood flows would not be substantively affected by most management actions. Construction of boardwalks or other day-use facilities would be required to comply with floodplain guidance and would have local, long-term, negligible, adverse effects on floodplains.

Overall, implementation of the VERP program and appropriate management actions based on monitoring results, and the implementation of specific limits for each management zone in the Valley could add an incremental level of protection for the hydrologic processes ORV over that provided by the VERP program alone (Alternative 2) or by the VERP program coupled with daily segment limits (Alternative 3). However, this additional protection is expected to be relatively small. Implementation of the VERP program and specific capacity limits for each management zone in the Valley would help prevent visitor use from adversely affecting floodplain values, riverbanks, and the river. This would result in a long-term, minor, beneficial impact to hydrology, water quality, and hydrologic processes in the Valley. Impacts on floodplains are expected to be negligible.

Impacts in the Gorge. The hydrologic processes ORV for the Gorge segment is related to the steep gradient of the river. This ORV is not readily susceptible to user-related impacts.

Implementation of VERP under Alternative 4 would be the same as described under Alternative 2. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures would reduce the loss of vegetative cover, soil compaction, soil erosion, and water pollution, resulting in local, short- and long-term, minor, benefits to hydrology and water quality. Closure and restoration of riparian areas is expected to result in local, long-term, minor to moderate benefits to hydrology and water quality. Site-hardening activities would be considered only within areas zoned Attraction (2D) or Park Operations and Administration (3C). Site hardening, such as construction of parking or picnic facilities, could have local, short-term, adverse effects related to soil disturbance, soil compaction, and erosion and sedimentation associated with construction activities. However, these facilities would be located in areas designated for higher intensity uses and would likely reduce the unofficial use of areas designated for less-intensive use. Therefore, the long-term effects associated with site improvements are expected to be local, minor, and beneficial.

The implementation of a limit for each management zone in the Gorge segment is expected to have a negligible to minor, beneficial effect on the hydrologic processes ORV. Overall, implementation of the VERP program through monitoring of indicators for each zone, the implementation of appropriate management actions based on monitoring results, and the implementation of specific capacity limits for each management zone would limit the number of visitors able to stop and enjoy the river in the Gorge. This would provide an incremental level of protection for the hydrologic processes ORV over that provided by the VERP program alone (Alternative 2) or by the VERP program with daily segment limits (Alternative 3). This would result in a long-term, minor, beneficial impact to hydrology, water quality, and hydrologic processes in the Gorge segment. Impacts on floodplains are expected to be negligible.

Impacts in El Portal. The hydrologic processes ORV in the El Portal segment is related to the continuous rapids in that segment. This ORV is not readily affected by the definition of the river corridor boundary, the zoning plan, or visitor use.

Alternative 4 would provide the most restrictive zoning for this segment of the river and include 404 acres of Open Space (2A), 277 acres of Discovery (2B), and only 132 acres designated for Park Operations and Administration (3C). The proposed boundary and zoning for the El Portal segment would likely result in additional development or redevelopment within the areas zoned 3C. This could result in a loss of vegetation, soil compaction and/or paving, with the potential for increased erosion and increased runoff from developed areas, thereby resulting in local, long-term, minor, adverse effects on hydrology and water quality. In addition, some development could occur within the floodplain, resulting in a local, long-term, minor, adverse effect on floodplain values. These minor, adverse effects would be minimized through careful site design;

Best Management Practices to limit vegetation loss, soil compaction, and erosion; and implementation of appropriate stormwater treatment measures.

Implementation of VERP under Alternative 4 would be the same as described under Alternatives 2 and 3. Educational measures are expected to result in local, short- and long-term, negligible to minor, beneficial effects, as described above. More restrictive measures are expected to reduce the loss of vegetative cover, soil compaction, soil erosion, and water pollution, resulting in local, short- and long-term, minor benefits to hydrology and water quality. Closure and restoration of riparian areas is expected to result in local, long-term minor to moderate benefits to hydrology and water quality. Site hardening would be considered only in areas zoned Park Operations and Administration (3C). Site hardening, such as construction of parking or picnic facilities, could have local, short-term, adverse effects related to soil disturbance, soil compaction, and erosion and sedimentation associated with construction activities. However, these facilities would be located in areas designated for higher intensity uses and are expected to reduce the unofficial use of areas designated for less intensive use. Therefore, the long-term effects associated with site improvements are expected to be local, minor, and beneficial. Effects on floodplains would primarily be related to construction activities within the floodplain. Since these activities would be expected to comply with floodplain requirements, effects on floodplains and the ability to accommodate flood flow is expected to be adverse but negligible.

The implementation of a limit for each management zone in the El Portal Administrative Site is expected to have a negligible to minor, beneficial effect on the hydrologic processes ORV. Overall, Alternative 4 would limit the number of visitors able to stop and enjoy the river in this area. This would provide an incremental level of protection for the hydrologic processes ORV over that provided by the VERP program alone (Alternative 2) or by the VERP program with daily segment limits (Alternative 3). This would result in a long-term, minor, beneficial impact to hydrology, water quality, and hydrologic processes in the El Portal area. Impacts on floodplains along the south side of the river are expected to be long term, minor to moderate, and beneficial.

Impacts in Wawona. The impoundment near Wawona is described as having excellent water quality, a hydrologic processes ORV. The Wawona segments themselves do not represent a hydrologic processes ORV, but the Below Wawona segment includes the free-flowing condition of the river and continual whitewater cascades, which are ORVs. The water quality element of the impoundment segment is the most susceptible to user-related impacts.

Typical management actions that might be taken under VERP have been described above. In general, the less restrictive measures would have short- and long-term, negligible to minor, beneficial impacts. More restrictive measures are expected to result in long-term, minor to moderate benefits. Management actions that include construction could have local, short-term, minor adverse effects on hydrology and water quality and long-term, negligible, adverse effects on floodplains. These activities would be designed to reduce effects on sensitive areas within the segment, and thus would be expected to have long-term, minor beneficial effects.

The implementation of a limit for each management zone in the Wawona segments is expected to have a negligible to minor beneficial effect on the hydrologic processes ORV. Overall, implementation of the VERP program through monitoring of indicators for each zone, the implementation of appropriate management actions based on monitoring results, and the implementation of specific capacity limits for each management zone would limit the number of visitors able to stop and enjoy the river in this area. This would provide an incremental level of protection for the hydrologic processes ORV over that provided by the VERP program alone (Alternative 2) or by the VERP program with daily segment limits (Alternative 3). This would result in a long-term, minor, beneficial impact to hydrology, water quality, and hydrologic processes in the Wawona area. Impacts on floodplains are expected to be negligible.

Overall, Alternative 4 is expected to have local, long-term, negligible to minor benefits to hydrology, water quality and the hydrologic processes ORV in the Wawona, Below Wawona and Impoundment segments. Adverse effects to floodplains from any construction activities would be local, long term, and negligible.

Summary of Alternative 4 Impacts

Overall, implementation of the VERP program, based on the management zoning developed in the Merced River Plan and specific limits for each management zone, would result in a long-term, minor, beneficial impact on hydrology, water quality, and hydrologic processes within the river corridor and a long-term, negligible, adverse effect on floodplains. The above, coupled with existing park management policies and elements in the existing Merced River Plan, would help to ensure that the individual elements of the hydrologic processes ORV are being protected and enhanced on a segment-by-segment basis throughout the Merced River corridor.

Cumulative Impacts

Cumulative effects to hydrology, floodplains, and water quality were described under Alternative 1.

Overall, past, present and reasonably foreseeable cumulative actions, in combination with Alternative 4, could have long-term, minor, beneficial effects on hydrology, floodplains, and water quality in the Merced River corridor.

Impairment

Alternative 4 would provide long-term, minor, beneficial impacts to water quality, floodplain values, and hydrologic processes in the Merced River corridor. As a result, Alternative 4 would not impair the hydrologic resources of the park for future generations.

Wetlands

Analysis

The following discussion provides an overview of the types of impacts to wetland resources that could occur within each segment of the Merced River corridor under Alternative 4. As described in detail in Chapter III, this alternative would manage user capacity in the river corridor by limiting the number of park visitors and employees allowed within each management zone and would provide a limit on maximum annual visitation to the park. Management actions under this alternative would be aimed at reducing the number of people in any management zone that exceeds its designated capacity limit, and managing visitation so that it does not exceed the annual maximum limit.

Under Alternative 4, establishment of management zone–based limits would allow park management to take actions to reduce visitor levels within each management zone if limits for a zone were exceeded, regardless of whether specific visitor-related impacts had been identified. This alternative would also provide an annual maximum limit on park visitation. A user capacity program based on an annual maximum limit and management zone limits would provide a mechanism for limiting the numbers of visitor by management zone if limits were exceeded.

In addition to the management zone limits, this alternative would also implement a VERP program, as described under Alternative 2. The VERP program would provide long-term tools for the protection of natural resources within the river corridor. Without systematic monitoring, such as that provided under the VERP program, allowable park use increases could have local, long-term, adverse effects on wetland resources, particularly in the vicinity of facilities and areas of concentrated use. However, an annual maximum visitor limit and management zone limits, in combination with VERP monitoring, could result in beneficial effects on wetland resources by, for example, limiting the number of people in each management zone or parkwide, or locating facility- and use-related impacts away from more sensitive areas.

Management actions associated with the redirection of visitors from wetlands and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Under Alternative 4, user capacity in the Wilderness segments of Yosemite National Park would be addressed through annual corridorwide visitation limits on park visitation. In addition, management zoning limits would result in the continued implementation of the trailhead quota system, which would serve to limit use to existing levels. Enforcement of wilderness limits could also be increased. Maintenance of existing use levels is expected to have a beneficial effect on wetlands and the biological ORVs in the Wilderness segments compared to Alternative 1.

As under Alternative 2, implementation of the VERP in wilderness areas would result in data that would inform future management decisions. Management actions implemented in response to VERP monitoring under Alternative 4 would have a local, long-term, minor, beneficial impact on wetlands.

The impacts of management actions implemented under Alternative 4 as a result of the VERP program would vary depending on the type of action taken. As under Alternative 2, low-intensity management responses, such as educational efforts would likely result in local, long-term, negligible to minor, beneficial effects on wetland resources. Higher intensity management responses, such as temporarily or permanently closing highly degraded or sensitive areas, would likely result in local, long-term, minor, beneficial effects on wilderness wetlands and the biological ORVs for the Wilderness segments of the Merced River.

Under Alternative 4, the implementation of an annual maximum visitor limit and user capacity limits by management zone, in addition to the VERP program within Wilderness segments, would have an overall long-term, minor, beneficial effect on wetlands and the biological ORVs in wilderness areas compared to Alternative 1.

Impacts in Yosemite Valley. Under Alternative 4, user capacity in Yosemite Valley would be addressed through the establishment of an annual maximum limit on park visitation and user capacity limits specific to each management zone within the Valley segment of the river corridor. VERP monitoring would result in management actions aimed at reducing the number of park users if the Valley limits were exceeded. Potential management actions to reduce the number of people in the Valley are described in Chapter II. Implementation of management zone limits for the Valley is expected to result in beneficial effects on wetlands and the biological ORVs compared to the No Action Alternative.

Implementation of the VERP program in the Valley would result in resource-specific data on the condition of resources and visitor experience that would inform future management decisions. VERP indicators have been selected to provide overall information on the health of resources throughout the river corridor and are described in Chapter II. Management actions implemented in response to VERP monitoring are the same as those described for Alternative 2. The impacts of management actions implemented in the Valley as a result of the VERP program would vary depending on the type of action taken. Alternative 4 would have an overall long-term, minor to moderate, beneficial effect on wetlands and the biological ORVs in the Yosemite Valley segment compared to Alternative 1.

Impacts in the Gorge. Under Alternative 4, user capacity in the Gorge segment would be addressed through the establishment of an annual maximum limit on park visitation and user capacity limits specific to the management zones within the Gorge segment of the river corridor. Monitoring would result in specific management actions aimed at reducing the number of park users if the parkwide limits or management zone limits were exceeded. Potential management actions to reduce the number of people in the Gorge segment include eliminating formal and informal parking areas, removing picnic areas, and requiring permits for use of the area. Limits would be based closely on existing use. Therefore, implementation of management zone limits for the Gorge segment is expected to have beneficial effects on wetlands and the biological ORVs compared to the No Action Alternative.

Data obtained through the implementation of VERP monitoring in the Gorge segment would result in data that would guide future management decisions. Impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken and could range from negligible to minor, beneficial effects. Alternative 4 would have an overall long-term, minor, beneficial effect on wetlands and the biological ORVs in the Gorge segment compared to Alternative 1.

Impacts in El Portal. Under Alternative 4, user capacity in the El Portal segment of the Merced River corridor would be addressed through the establishment of an annual maximum limit on park visitation and user capacity limits specific to each management zone within the El Portal river corridor boundary. Monitoring would result in specific management actions aimed at reducing the number of park users if the annual limit or management zone limits were exceeded. Potential management actions are the same as those described for Alternative 3. Therefore, implementation of management zone limits for the El Portal segment are expected to have a beneficial effect on wetlands and the biological ORVs compared to the No Action Alternative.

Under Alternative 4, the river corridor boundary would closely delineate the ORVs along the El Portal segment of the river. A total of 814 acres would be included within the river corridor boundary at El Portal. The revised El Portal river corridor boundary under this alternative is expected to have a local, long-term, minor to moderate, beneficial effect on wetland resources in the El Portal segment compared to Alternative 1, because the corridor area would be increased.

Compared to Alternative 1, Alternative 4 would include more restrictive management zoning for much of the area south of the river. The area south of the river and west of the Abbieville levee would be primarily zoned Discovery (2B), except for a portion of the existing Trailer Village/Abbieville area, which would be zoned for Park Operations and Administration (3C). The remainder of the area within the El Portal Administrative Site, east of the Abbieville levee, would be zoned Open Space (2A), which calls for relatively undisturbed natural areas with only incidental or casual use and very limited facilities. Most undeveloped areas north of the river would be zoned Discovery (2B). Existing developed areas north of the river would be zoned for Park Operations and Administration (3C). This zoning would be more restrictive with respect to the development of park administrative facilities (allowing such uses on only 16% of lands within the riparian corridor compared to 29% under Alternative 1) as well as other types of development. Under this zoning, Alternative 4 would provide 132 acres for Park Operations and Administration (3C), 277 acres for Discovery (2B), and 404 acres would be zoned Open Space (2A).

Portions of El Portal would be zoned 3C (e.g., the Trailer Village, Old El Portal), which allows redevelopment as well as additional development (e.g., employee residences located in Yosemite Valley could be relocated to the El Portal Administrative Site). Potential development could have both short-term (e.g., construction-related) and long-term (e.g., fire suppression in the vicinity of structures), minor to moderate, adverse effects on wetlands. Although application of mitigation measures described in Appendix B would reduce impacts, long-term, minor to moderate, adverse effects to wetlands (e.g., conversion of upland woodland or scrub vegetation to developed facilities) would remain.

It should be noted that all ORVs must be protected regardless of the zoning or whether or not they occur within or outside of the river corridor boundary. In addition, the implementation of VERP monitoring in El Portal would result in data that would guide future management decisions regarding wetland resources in this segment. The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken, ranging from minor to moderate, beneficial effects on wetlands and the biological ORVs for the El Portal segment.

Local, short- and long-term, moderate, adverse effects to wetlands could occur as the result of future actions that could be implemented under the proposed zoning (e.g., new parking facilities and employee housing, road repair). However, adverse effects would be reduced in intensity under Alternative 4 by the application of zoning within the larger, revised river corridor boundary (as compared to Alternative 1). The revised boundary would require the application of a consistent set of criteria and considerations (as described under the Alternative 1 analysis) to a larger area and the implementation of the VERP program within the El Portal segment.

The application of the revised El Portal river corridor boundary under this alternative is expected to have a local, long-term, minor to moderate, beneficial effect on wetland resources in the El Portal segment compared to Alternative 1, as the corridor area would be increased. Alternative 4 would therefore have an overall local, long-term, minor to moderate, beneficial effect on native wetlands and the biological ORVs in the El Portal segment compared to Alternative 1.

Impacts in Wawona. Under Alternative 4, user capacity in the Wawona segments would be addressed through the establishment of an annual maximum limit on park visitation and user capacity limits specific to the management zones within the Wawona segments of the river corridor. Monitoring would result in specific management actions aimed at reducing the number of park users if the management zone limits were exceeded. Potential management actions to reduce the number of people in the Wawona segments are described in Chapter II. Implementation of management zone limits that maintain existing levels of use for the Wawona segments would likely have a beneficial effect on wetland and the biological ORVs compared to the No Action Alternative.

Implementation of VERP monitoring in the Wawona segment would result in data that would guide future management decisions. The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken. Low-intensity management responses, such as educational signage or brochures, could decrease impacts from visitor use by changing behavior in ways that would reduce the trampling of wetlands, creation of social trails, as well as erosion. Education efforts would likely result in local, long-term, minor, beneficial effects on wetland resources. Higher intensity management responses, such as temporarily or permanently closing highly degraded or sensitive areas or restoring wetlands affected by social trails or eroded riverbanks, would likely result in local, long-term, moderate, beneficial effects on wetlands and the biological ORVs for the Wawona segments.

Overall, Alternative 4 would have a long-term, minor to moderate, beneficial impact on wetlands and the biological ORVs in the Wawona segment.

Summary of Alternative 4 Impacts. Implementation of an annual maximum limit on Park visitation would likely result in long-term, beneficial impacts to wetlands compared to Alternative 1. Implementation of management zone limits would require park management to limit the number of people using specific segments of the park. Management zone limits reduce user levels and would thus have a beneficial effect on wetlands compared to Alternative 1, which could allow use levels to rise throughout the park. The implementation of VERP monitoring would inform management planning and drive the implementation of actions designed to protect wetland resources and the biological ORVs, thus resulting in beneficial effects. The revised El Portal river corridor boundary would allow for the application of these management elements to a much greater area than that described in Alternative 1. Overall, Alternative 4 would have local, short- and long-term, minor to moderate, beneficial effects on wetlands and the biological ORVs. In addition, compliance with existing park policies would help ensure that the biological ORVs related to wetlands are protected and enhanced.

Cumulative Impacts

Cumulative effects to wetlands would be the same as described for Alternative 1. Past, present, and reasonably foreseeable future cumulative actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on wetlands and wetland-related ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 4, could have a net local, long-term, minor, beneficial effect on parkwide wetlands and the biological ORVs of the Merced River corridor.

Impairment

Alternative 4 would have a local, long-term, minor to moderate, beneficial effect on parkwide wetlands as well as the biological ORVs of the Merced River corridor and therefore would not impair wetland resources for future generations.

Vegetation

Analysis

The following discussion provides an overview of the types of impacts to vegetation resources that could occur within each segment of the Merced River corridor under Alternative 4. This alternative would manage user capacity in the river corridor by implementing an annual maximum limit on park visitation and by limiting the number of park visitors and employees allowed within each management zone. Management actions under this alternative would be aimed at reducing the number of people in any management zone that exceeds its designated user capacity limit and managing visitation so that it does not exceed the annual maximum limit.

Under Alternative 4, establishment of management zone–based limits would allow park management to take actions to reduce visitor levels within each management zone if limits for a zone were exceeded. This alternative would also provide an annual maximum limit on park visitation. A user capacity program based on an annual maximum limit and management zone limits would provide a mechanism for limiting the number of visitors by management zone if limits were exceeded. In addition to the management zone limits, Alternative 4 would implement the VERP program, as described for Alternative 2. The VERP program would provide long-term tools for the protection of natural resources within the river corridor. Allowable park use increases could have local, long-term, adverse effects on vegetation resources, particularly in the vicinity of facilities and areas of concentrated use. However, management zone limits and an annual maximum visitor limit, in combination with VERP monitoring, could result in beneficial effects on vegetation resources by, for example, limiting the number of users in each management zone.

Management actions associated with the redirection of visitors from areas with sensitive vegetation and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Under Alternative 4, user capacity in the Wilderness segments of the Merced River corridor would be addressed through implementation of annual corridorwide visitation limits on park visitation. In addition, the application of management zone user capacity limits would result in the continued implementation of the existing trailhead quota system, which would limit visitor use to existing levels. Enforcement of trailhead quotas could also be increased. Alternative 4 would be expected to have a beneficial effect on vegetation and the biological ORVs in the Wilderness segments compared to Alternative 1.

As under Alternative 2, implementation of the VERP program with management zone limits in wilderness areas would result in data that would inform future management decisions. Management actions implemented in response to VERP monitoring under Alternative 4 would have a local, long-term, minor, beneficial impact on vegetation.

The impacts of management actions implemented under Alternative 4 as a result of VERP monitoring would vary depending on the type of action taken. As under Alternative 2, low-intensity management responses, such as educational efforts, would likely result in local, long-term, negligible to minor, beneficial effects on vegetation resources. Higher intensity management responses, such as temporarily or permanently closing highly degraded or sensitive areas, would be expected to result in local, long-term, minor, beneficial effects on wilderness vegetation and the biological ORVs for the Wilderness segments of the Merced River.

Under Alternative 4, the implementation of an annual maximum visitor limit and limits by management zone, in addition to the VERP program within Wilderness segments, would have an overall long-term, minor, beneficial effect on native vegetation and the biological ORVs in wilderness areas compared to Alternative 1.

Impacts in Yosemite Valley. Under Alternative 4, user capacity in Yosemite Valley would be addressed through the establishment of an annual maximum limit on park visitation and limits specific to each management zone within the Valley segment of the river corridor. VERP monitoring could result in management actions being implemented to reduce the number of park users if the limits were exceeded. Implementation of management zone limits would likely result in beneficial effects on vegetation and the biological ORVs in the Valley compared to the No Action Alternative.

Implementation of the VERP program with management zone limits in the Valley would provide resource-specific data on the condition of resources that would inform future management decisions. Indicators and standards have been selected to provide overall information on the health of resources throughout the river corridor (see table II-5). Management actions implemented in response to data obtained through VERP monitoring would be the same as those described under Alternative 2. The impacts of management actions in the Valley as a result of the VERP program would vary depending on the type of action taken. Alternative 4 would have an overall long-term, minor to moderate, beneficial effect on native vegetation and biological ORVs in the Valley segment compared to Alternative 1.

Impacts in the Gorge. Under Alternative 4, user capacity in the Gorge segment would be addressed through the establishment of an annual maximum limit on park visitation and user capacity limits specific to the management zones within the Gorge segment of the river corridor. Monitoring could result in specific management actions being implemented to reduce the number of users if the parkwide limits or management zone limits were exceeded. Potential management actions to reduce the number of visitors in the Gorge segment include eliminating formal and informal parking areas, removing picnic areas, and requiring permits for use of the area. Implementation of management zone limits in the Gorge segment would likely have beneficial effects on vegetation and the biological ORVs compared to the No Action Alternative.

Data obtained from the implementation of VERP monitoring in the Gorge segment would guide future management decisions. Impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken and could range from negligible to minor, beneficial effects. Alternative 4 would have an overall long-term, minor, beneficial effect on native vegetation and the biological ORVs in the Gorge segment compared to Alternative 1.

Impacts in El Portal. Under Alternative 4, user capacity in the El Portal segment of the river corridor would be addressed through the establishment of an annual maximum limit on park visitation and user capacity limits specific to each management zone within the El Portal river corridor boundary. Monitoring would result in specific management actions aimed at reducing the number of park users if the annual limit or management zone limits were exceeded. Potential management actions would be the same as those described for Alternative 3. Management zone limits in the El Portal segment are expected to have a beneficial effect on vegetation and the biological ORVs compared to the No Action Alternative.

Under Alternative 4, the river corridor boundary would closely delineate the ORVs along the El Portal segment of the river. A total of 814 acres would be within the river corridor boundary at El Portal. The revised El Portal river corridor boundary under this alternative are expected to have a local, long-term, minor to moderate, beneficial effect on vegetation and the biological ORVs in the El Portal segment compared to Alternative 1 because the corridor area would be increased.

Compared to Alternative 1, Alternative 4 includes more restrictive management zoning for much of the area south of the river. The area south of the river and west of the Abbieville levee would be primarily zoned Discovery (2B), except for a portion of the existing Trailer Village/Abbieville area, which would be zoned for Park Operations and Administration (3C). The remainder of the area within the El Portal Administrative Site, east of the Abbieville levee, would be zoned Open Space (2A), which calls for relatively undisturbed natural areas with only incidental or casual use and very limited facilities. Most undeveloped areas north of the river would be zoned 2B. Existing developed areas north of the river would be zoned 3C. This alternative would be more restrictive with respect to development of park administrative facilities (allowing such uses on only 16% of lands within the riparian corridor boundary compared to 29% under Alternative 1) as well as other types of development. Under this zoning, Alternative 4 would provide 132 acres for Park Operations and Administration (3C), 277 acres for Discovery (2B), and 404 acres for Open Space (2A).

Portions of El Portal would be zoned 3C (e.g., the Trailer Village, Old El Portal), which allows redevelopment as well as additional development (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Potential development could have both short-term and long-term, minor to moderate, adverse effects on native vegetation. Although application of mitigation measures (see Appendix B) would reduce impacts, long-term, minor to moderate, adverse effects to native vegetation (e.g., conversion of upland woodland or scrub vegetation to developed facilities) would remain.

It should be noted that all ORVs must be protected regardless of the management zoning designation or whether or not the ORVs occur within or outside of the river corridor boundary. In addition, the implementation of VERP monitoring in El Portal would result in data that would guide future management decisions regarding vegetation resources in this segment. The impacts of management actions implemented as a result of the VERP program with management zone Limits would vary depending on the type of action taken, ranging from minor to moderate, beneficial effects on vegetation and the biological ORVs for the El Portal segment.

Local, short- and long-term, moderate, adverse effects to native vegetation could occur as the result of future actions that could be implemented under the proposed zoning (e.g., new employee housing, road repair). However, adverse effects would be reduced in intensity under Alternative 4 by the application of zoning within the larger, revised river corridor boundary (as compared to Alternative 1). The revised boundary would require the application of a consistent set of criteria and considerations (as described under the Alternative 1 analysis) to a larger area and the implementation of the VERP program within the El Portal segment.

The application of the revised El Portal river corridor boundary under this alternative is expected to have a local, long-term minor to moderate, beneficial effect on vegetation resources in the El Portal segment compared to Alternative 1. Alternative 4 would therefore have an overall local, long-term, minor to moderate, beneficial effect on native vegetation and the biological ORVs in the El Portal segment compared to Alternative 1.

Impacts in Wawona. Under Alternative 4, user capacity in the Wawona segments would be addressed through the establishment of an annual maximum limit on park visitation and management zone limits within the river corridor. Monitoring would result in specific management actions aimed at reducing the number of users if the limits were exceeded. Implementation of management zone limits for the Wawona segments would likely have a beneficial effect on vegetation and the biological ORVs compared to the No Action Alternative.

Implementation of VERP monitoring in the Wawona segment would provide data to guide future management decisions. The impacts of management actions implemented as a result of the VERP program would vary depending on the type of action taken. Low-intensity management responses, such as educational signage or brochures, might reduce impacts from visitor use by changing behavior to reduce the trampling of vegetation, use of social trails, and erosion. Education efforts would likely result in local, long-term, minor, beneficial effects on vegetation resources. Higher intensity management responses, such as restoring vegetation to social trails or eroded riverbanks, would likely result in local, long-term, moderate, beneficial effects on vegetation and the biological ORVs in the Wawona segments.

Overall, Alternative 4 would have a long-term, minor to moderate, beneficial impact on native vegetation and the biological ORVs in the Wawona segments.

Summary of Alternative 4 Impacts. Implementation of an annual maximum limit on park visitation would likely result in long-term, beneficial impacts to vegetation compared to Alternative 1, which has no such mechanism to limit visitation. Implementation of management zone limits would allow park management to limit visitor levels in specific areas of the river corridor. Management zone limits would have a beneficial effect on vegetation compared to Alternative 1. VERP monitoring would inform management planning and drive the implementation of actions designed to protect vegetation resources and the biological ORVs, thus resulting in beneficial effects. The revised El Portal river corridor boundary would allow for the application of these management elements to a much greater area than that described in Alternative 1. Overall, Alternative 4 would have local, short- and long-term, minor to moderate, beneficial effects on vegetation and the biological ORVs. Additionally, compliance with existing park policies would help ensure that the biological ORVs related to vegetation are protected and enhanced.

Cumulative Impacts

Cumulative impacts on vegetation under Alternative 4 would be the same as those identified and described under Alternative 1. Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on vegetation and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 4, could have a net local, long-term, minor, beneficial effect on parkwide vegetation and the biological ORVs of the Merced River corridor.

Impairment

Alternative 4 would have a local, long-term, minor to moderate, beneficial effect on parkwide vegetation as well as the biological ORVs of the Merced River corridor and therefore would not impair vegetation resources for future generations.

Wildlife

Analysis

The following discussion provides an overview of the types of impacts to wildlife resources and the biological ORVs that could occur within each segment of the Merced River corridor under Alternative 4. Under Alternative 4, management zone limits would limit the number of park visitors in each management zone. In the short term under Alternative 4, visitor numbers are expected to be similar to those under Alternative 1. Long-term, beneficial impacts to wildlife would occur through implementation of management zone limits and VERP monitoring and management actions that would limit use of the corridor at a level that would protect wildlife resources and the biological ORVs.

Management actions associated with the redirection of visitors from areas with sensitive wildlife habitat and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Under Alternative 4, user capacity in the Wilderness segments of Yosemite National Park would continue to be addressed through implementation of the trailhead quota system and monitoring programs. Existing quotas based on resource protection goals currently restrict the number of day users on both established trails and cross-country routes in wilderness areas to prevent degradation of high-elevation meadows and impacts to associated wildlife species. Under this alternative, management would have the capacity to reduce limits as needed. The reduction of limits in response to VERP monitoring would likely result in local, short- and long-term, minor, beneficial effects on wildlife resources. Alternative 4 would also include implementation of the VERP program in wilderness areas. Implementation of VERP under Alternative 4 would be the same as described for Alternative 2. Management actions such as visitor education would be expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, negligible, beneficial impact. Increased law enforcement, reduced wilderness trailhead quotas, and closure of areas would likely result in local, short- and long-term, negligible to minor, beneficial impacts to wildlife resources by reducing trampling, erosion, social trails, human disturbance to wildlife, and human/wildlife conflicts.

Due to the seasonal nature of visitation to Wilderness segments of the river corridor coupled with the limited number of visitors allowed into the river corridor in these areas as a result of the trailhead quota system, implementation of the VERP program with user limits by management zone and subsequent management actions overall would likely have local, short- and long-term, negligible to minor, beneficial impacts to wildlife resources and the biological ORVs in wilderness areas.

Impacts in Yosemite Valley. As described above, Alternative 4 would include implementation of the VERP program as well as management zone user capacity limits that would limit the number of users in each management zone of the river corridor within Yosemite Valley. The user capacity program would result in additional resource-specific monitoring of indicators within this area. Implementation of VERP under Alternative 4 would be the same as described for Alternative 2.

The impacts of management actions implemented as a result of VERP monitoring and user limits by management zone would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions such as visitor education are expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, minor, beneficial impact. Increased ranger patrols, increased enforcement of trail restrictions, and closure of areas would likely result in local, short- and long-term, minor to moderate, beneficial impacts to wildlife resources by reducing trampling, erosion, social trails, human disturbance to wildlife, and human wildlife conflicts.

Alternative 4 would implement management zone limits for each management zone in addition to the VERP program, which would prevent visitor impacts from adversely affecting ORVs. Overall, Alternative 4 would provide protection for native wildlife and the biological ORVs in Yosemite Valley and would result in a net local, short- and long-term, moderate, beneficial effect.

Impacts in the Gorge. Under Alternative 4, user capacity in the Gorge segment would be addressed through establishment of a user-capacity limit specific to the established management zones within the Gorge segment of the river corridor. VERP monitoring would provide data on the condition of wildlife resources that would guide future wildlife management and visitor experience decisions. VERP management actions would be aimed at reducing the number of park users if the management zone limits were to be exceeded. Potential management actions to reduce visitation in the Gorge segment include eliminating formal and informal parking areas, removing picnic areas, and requiring permits for use of the area. Implementation of management zone limits for the Gorge segment is expected to have a local, minor to moderate, beneficial effect on wildlife and the biological ORVs compared to the No Action Alternative.

The impacts of management actions implemented as a result of VERP monitoring with user limits by management zone would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions such as visitor education are expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, minor, beneficial impact. Implementation of a permit reservation system for picnic areas, increased enforcement of food storage restrictions, and closure of areas would likely result in local, short- and long-term, minor to moderate, beneficial impacts to wildlife resources by reducing trampling, erosion, social trails, human disturbance to wildlife, and human/wildlife conflicts.

Alternative 4 would implement the VERP program and limits for each management zone which would prevent visitor impacts from adversely affecting ORVs. Overall, Alternative 4 would have a local, short- and long-term, minor to moderate, beneficial effect on native wildlife and the biological ORVs within the Gorge segment.

Impacts in El Portal. Under Alternative 4, the river corridor boundary within El Portal would include nearly all of the biological ORVs of the El Portal segment of the Merced River within the El Portal Administrative Site. The boundary would include the full reaches of Crane Creek and most other tributaries to the Merced River and associated riverine habitats, and habitat south of the Merced River within the El Portal Administrative Site. Alternative 4 would designate low-intensity zoning (2A and 2B) for the majority of the area south of the river and higher intensity zoning (3C) in limited areas in the vicinity of existing development areas. In addition, Alternative 4 also designates several other smaller areas north of the river, such as Crane Creek and adjacent riparian habitat to the east, as lower intensity zoning (2B).

Examples of how management zoning would affect native wildlife and wildlife-related biological ORVs of El Portal are described below.

- The Sand Pit in El Portal was once used to mine sand from the Merced River. Under its 2B zoning, the Sand Pit could be restored, which would allow natural processes to prevail at this location, enhance the aquatic habitat, and allow natural revegetation with riparian species, thus resulting in a local, moderate, beneficial effect on this ORV.
- Portions of El Portal are zoned 3C (e.g., Rancheria Flat and Old El Portal), which could allow additional development or redevelopment (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Potential development or redevelopment could have both short-term (e.g., construction-related) and long-term (e.g., night lighting, human presence, fire suppression in the vicinity of structures), minor to major, adverse effects on native wildlife. Although application of mitigation measures described in Appendix B would reduce impacts, long-term, minor to moderate, adverse effects to native wildlife (e.g., conversion of upland woodland or scrub vegetation to developed facilities) would remain.
- The revised boundary would increase the area included in the river corridor from 193 acres to 814 acres. Approximately 132 acres of habitat would be zoned 3C, allowing development of park operations and administration facilities, and this development would be primarily concentrated in the vicinity of existing development. Designation of 404 acres of habitat zoned 2A (encompassing much of the biological ORVs south of the river) and 2B designations in the other areas (supporting wildlife resources north of the river) limit the development intensity in these regions, resulting in a local, long-term, moderate, beneficial effect on wildlife resources and the biological ORVs.

Under Alternative 4, user capacity in the El Portal segment of the river corridor would be addressed through the establishment of a user capacity limit specific to each management zone within the El Portal river corridor boundary. The addition of the VERP program would result in data on the condition of wildlife resources that would guide future management decisions on El Portal. VERP management actions would be aimed at reducing the number of park users if the El Portal limit were exceeded. Potential management actions to reduce visitation in the El Portal segment include reducing access by removing parking or trails; requiring permits for day or other use; restricting fishing and swimming; and reducing employee numbers and/or housing them in other areas. Implementation of management zone limits for the El Portal management zones is expected to have a local, minor to moderate, beneficial effect on wildlife and the biological ORVs compared to the No Action Alternative.

The impacts of management actions implemented as a result of VERP monitoring would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions are expected to reduce impacts by limiting visitor use and changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, minor to moderate, beneficial impact.

The application of management zoning and VERP monitoring and management actions with management zone user capacity limits would protect and enhance wildlife and the biological ORVs in El Portal. The zoning in El Portal would allow for road repair as well as additional development or redevelopment of park administration facilities, which could have short- and long-term, adverse effects to native wildlife. The biological ORVs within the El Portal Administrative Site would be located within the river corridor boundary (e.g., Crane Creek and other tributaries to the Merced River and the majority of the associated riverine habitats, habitat south of the Merced River) and the criteria and considerations (including the Section 7 determination process) would protect the biological ORVs . Overall, the application of an increased river boundary, restrictive management zoning, the VERP monitoring process, management zone limits, and resulting management actions within El Portal would have a local, short- and long-term, minor to moderate, beneficial effect on native wildlife and the biological ORVs.

Impacts in Wawona. Under Alternative 4, user capacity in the Wawona segments would be addressed through the establishment of a user capacity limit specific to the management zones within the Wawona segments of the river corridor. Monitoring would result in specific management actions aimed at reducing the number of park users if the management zone limits were exceeded. Potential management actions to reduce the number of people in the Wawona segments include instituting a day-use reservation system, reducing the number of commercial bus permits issued, and establishing additional fishing restrictions. Implementation of management zone limits that maintain existing levels of use in Wawona are expected to have a local, minor to moderate, beneficial effect on wildlife and the biological ORVs compared to the No Action Alternative.

The impacts of management actions implemented as a result of VERP monitoring of management zone user capacity limits would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on wildlife resources. Management actions are expected to reduce impacts by limiting visitor use and changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, feeding of wildlife, and human/wildlife conflicts, resulting in a local, short- and long-term, minor to moderate, beneficial impact.

Overall, Alternative 4 would have a local, short- and long-term, minor to moderate, beneficial impact on native wildlife and the biological ORVs of Wawona.

Summary of Alternative 4 Impacts. Overall, limits on facilities through management zoning in El Portal in combination with VERP monitoring and management actions would allow existing natural areas to remain relatively intact and would direct restoration and enhancement of degraded native habitats. Implementation of management zone limits would allow for park management to limit visitation in specific management zones. The annual maximum limit on park visitation under Alternative 4 is lower than current annual visitation and is likely to be lower than long-term increases expected under Alternative 1, resulting in minor, beneficial impacts to wildlife. The revised river corridor boundary at El Portal and management zones restrictive of development would protect the biological ORV within a quarter-mile of the river, resulting in beneficial effects on wildlife resources. Alternative 4 would result in a local, short- and long-term, minor to moderate, beneficial impact on native wildlife and the biological ORVs within the river corridor. In addition, compliance with existing park policies would help ensure that the biological ORVs related to wildlife are protected and enhanced.

Cumulative Impacts

Cumulative effects to wildlife from past, present, and foreseeable future actions are the same as those described for Alternative 1. Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on wildlife and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 4, could have a net local, short- and long-term, minor to moderate, beneficial effect on parkwide native wildlife and the biological ORVs of the Merced River corridor.

Impairment

Alternative 4 would have a local, short- and long-term, minor to moderate, beneficial effect on parkwide native wildlife as well as the biological ORVs of the Merced River corridor and therefore would not impair wildlife resources for future generations.

Rare, Threatened, and Endangered Species

Analysis

The following discussion provides an overview of the types of impacts to rare, threatened, and endangered species and the biological ORVs that could occur within each segment of the Merced River corridor under Alternative 4. Under this alternative, management zone limits would limit the number of park visitors in each management zone. In the short term under Alternative 4, visitor numbers are expected to be similar to those under Alternative 1. However, in the long term, visitor numbers would likely be lower than under Alternative 1 due to management zone limits and VERP monitoring and management actions that could limit the number of park visitors within each management zone and ensure that the management zone limits are not exceeded. The annual maximum limit on park visitation under Alternative 4 is lower than current annual visitation and is likely to be lower than expected under Alternative 1, resulting in beneficial impacts to rare, threatened, and endangered species. Long-term, beneficial impacts to special-status species would occur through implementation of management zone limits and VERP monitoring and management actions that would maintain use of the park at a level that would protect special-status species and the biological ORVs.

Management actions associated with the redirection of visitors from areas with known rare, threatened and endangered species and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Under Alternative 4, user capacity in the Wilderness segments of Yosemite National Park would continue to be addressed through implementation of the trailhead quota system and monitoring programs. Under this alternative, management would have the capacity to reduce quotas as needed. Enforcement of trailhead quotas could also be increased. Existing quotas based on resource protection goals currently restrict the number of day users on both established trails and cross-country routes in wilderness areas to prevent degradation of high-elevation meadows (potential habitat for rare, threatened, and endangered species) and the biological ORVs. The reduction of quotas in response to VERP monitoring could result in local, short- and long-term, minor, beneficial effects on rare, threatened, and endangered species. Alternative 4 would also implement the VERP program in wilderness areas, resulting in additional resource-specific monitoring of biological indicators in wilderness management zones and subsequent management actions.

VERP management actions would be designed to address visitor-related impacts on biological resources, including rare, threatened, and endangered species. Management actions such as visitor education are expected to reduce impacts by changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local, short- and long-term, negligible, beneficial impact. Increased law enforcement, reduced wilderness trailhead quotas, and closure of areas would likely result in local, short- and long-term, negligible to minor, beneficial impacts to rare, threatened, and endangered species by reducing trampling, erosion, social trails, and human disturbance to wildlife.

Due to the seasonal nature of visitation to Wilderness segments of the river corridor coupled with the limited number of visitors allowed into the river corridor in these areas as a result of the trailhead quota system, implementation of the VERP program and management zone limits overall is expected to have local, short- and long-term, negligible to minor, beneficial impacts to rare, threatened, and endangered species and the biological ORVs in wilderness areas.

Impacts in Yosemite Valley. As described above, Alternative 4 would implement the VERP program and management zone user capacity limits in each management zone of the river corridor within Yosemite Valley. The user capacity program would result in additional resource-specific monitoring of indicators within this area. Implementation of VERP under Alternative 4 would be the same as described for Alternative 2.

Implementation of VERP monitoring in the Valley would result in data on the condition of rare, threatened, and endangered species that would guide future resource management and visitor experience decisions. User capacity limits specific to management zones of the river corridor would result in specific management actions aimed at reducing the number of park users if the Valley management zone limits were to be exceeded. Potential management actions to reduce visitation in the Valley include reducing access by removing parking areas or trails; requiring day-use permits; removing picnic tables; reducing the number of campsites; enforcing group size for campsites; reducing the number of rooms at hotels; reducing the number of employees; and housing employees outside of the Valley. Implementation of management zone limits that maintain existing levels of use for the Valley is expected to have a local, moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs compared to the No Action Alternative.

The effects of VERP management actions would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on rare, threatened, and endangered species. Management actions such as visitor education would have a local, short- and long-term, minor, beneficial impact. Increased ranger patrols, increased enforcement of trail restrictions, and closure of areas are expected to result in local, short- and long-term, minor to moderate, beneficial impacts to rare, threatened, and endangered species.

Alternative 4 would include management zone limits and implementation of the VERP program. Overall, Alternative 4 would provide protection for rare, threatened, and endangered species and the biological ORVs in Yosemite Valley and would result in a net local, short- and long-term, moderate, beneficial effect compared to Alternative 1.

Impacts in the Gorge. Under Alternative 4, user capacity in the Gorge segment would be addressed through the establishment of a user capacity limit specific to the established management zones within the Gorge segment. VERP monitoring would result in data on the condition of rare, threatened, and endangered species that would guide future resource management and visitor experience decisions. VERP management actions would be aimed at reducing the number of park users if the management zone limits were exceeded. Potential management actions to reduce the number of people in the Gorge segment include eliminating formal and informal parking areas, removing picnic areas, and requiring permits for use of the area. Limits for all management zones would be based on existing use and would prevent increased visitor-use effects to rare, threatened, and endangered species compared to Alternative 1. Therefore, implementation of management zone limits that maintain existing levels of use for the Gorge segment are expected to have a local, minor to moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVS compared to the No Action Alternative.

The impacts of VERP management actions would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on rare, threatened, and endangered species. Management actions such as visitor education would have a local, short- and long-term, minor, beneficial impact. Implementation of a permit reservation system for picnic areas, increased enforcement of trail restrictions, and closure of areas would likely result in local, short- and long-term, minor to moderate, beneficial impacts to rare, threatened, and endangered species.

Alternative 4 would include implementation of management zone limits as well as VERP monitoring and management actions, which would prevent visitor impacts from adversely affecting ORVs. Overall, Alternative 4 would provide protection for rare, threatened, and endangered species and the biological ORVs and would result in a local, short- and long-term, minor to moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs within the Gorge segment compared to Alternative 1.

Impacts in El Portal. Under Alternative 4, the river corridor boundary within El Portal would include nearly all of the ORVs within the El Portal Administrative Site. The boundary would include the full reaches of Crane Creek and most other tributaries to the Merced River and associated riverine habitats, and habitat south of the Merced River within the El Portal Administrative Site. Alternative 4 would designate low to very low-intensity management zoning (2A and 2B) for the majority of area south of the river and higher intensity zoning (3C) in limited areas in the vicinity of existing development areas. In addition, Alternative 4 designates several other smaller areas north of the river, such as Crane Creek and adjacent riparian habitat to the east, as lower intensity zoning (2B).

Examples of how management zoning would affect rare, threatened, and endangered species and the biological ORVs of El Portal are described below.

- The Sand Pit in El Portal was once used to mine sand from the Merced River. Under its 2B zoning, the Sand Pit could be restored, which would allow natural processes to prevail at this location, enhance the aquatic habitat, and allow natural revegetation with riparian species, thus resulting in a local, moderate, beneficial effect on this ORV.

- Portions of El Portal would be zoned 3C (e.g., Railroad Flat, Rancheria Flat, Old El Portal), which could allow additional development (e.g., employee residences in Yosemite Valley could be relocated to the El Portal Administrative Site). Potential development could have both short-term (e.g., construction-related) and long-term (e.g., night lighting, human presence, fire suppression in the vicinity of structures), minor to moderate, adverse effects on rare, threatened, and endangered species. Although application of mitigation measures described in Appendix B would reduce impacts, long-term, minor, adverse effects to rare, threatened, and endangered species (e.g., conversion of upland woodland or scrub vegetation to developed facilities) would remain.
- The revised boundary would increase the area included in the river corridor from 193 acres to 814 acres. Approximately 132 acres of habitat would be zoned 3C, allowing development of park operations and administration facilities, and this development would be primarily concentrated in the vicinity of existing development. The designation of 404 acres of habitat as 2A (encompassing much of the biological ORVs south of the river and in the vicinity of Crane Creek) and 2B management zoning designations in some areas north of the river (that potentially support rare, threatened, and endangered species, such as Valley elderberry longhorn beetle, Tompkin's sedge, and Congdon's wooly sunflower) would substantially limit the development intensity in these regions, resulting in a local, long-term, moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs.

Under Alternative 4, user capacity in the El Portal segment would be addressed through the establishment of a user capacity limit specific to each management zone within the El Portal river corridor. The addition of VERP would provide data on the condition of rare, threatened, and endangered species that would guide future resource and visitor-use management decisions on El Portal. VERP management actions would be aimed at reducing the number of park users if the management zone limits were exceeded. Potential management actions to reduce the number of people in the El Portal segment include reducing access by removing parking or trails; requiring permits for day or other use; restricting fishing and swimming; and reducing employee numbers and/or housing them in other areas. Implementation of management zone limits for the El Portal management zones is expected to have a local, minor to moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs compared to the No Action Alternative.

The effects of VERP management actions would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on rare, threatened, and endangered species. Management actions such as visitor education would be expected to reduce impacts by limiting visitor use and changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local, short- and long-term, minor to moderate, beneficial impact.

The application of management zoning, VERP monitoring and management actions, and management zone user capacity limits set close to existing use levels would protect and enhance rare, threatened, and endangered species and the biological ORVs in El Portal. The zoning in El Portal would allow for road repair as well as additional development of park administration facilities, which could have short- and long-term, adverse effects on rare, threatened, and endangered species. The biological ORVs within the El Portal Administrative Site would be located within the river corridor boundary and the criteria and considerations (including the Section 7 determination process) would protect the biological ORVs. Overall, the application of an increased river boundary, restrictive management zoning, and VERP with limits by management zone would have a local, short- and long-term, minor to moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs.

Impacts in Wawona. Under Alternative 4, user capacity in the Wawona segments would be addressed through the establishment of a user capacity limit specific to the management zones within the Wawona segments of the river corridor and set close to existing management zone use levels. Management actions would be taken to reduce the number of people in the Wawona segments if the management zone limits were exceeded. Management actions could include instituting a day-use reservation system, reducing the number of commercial bus permits issued, or establishing additional fishing restrictions. Implementation of management zone for the Wawona segments is expected to have a local, minor to moderate, beneficial effect on rare, threatened, and endangered species and the biological ORVs compared to the No Action Alternative.

The effects of management actions implemented as a result of VERP monitoring and management zone limits would vary depending on the action taken, although all of the actions would be designed to address visitor-related impacts on rare, threatened, and endangered species. Management actions are expected to reduce impacts by limiting visitor use and changing visitor behavior within the corridor in ways that would reduce trampling, erosion, social trails, and human disturbance, resulting in a local, short- and long-term, minor to moderate, beneficial impact.

Overall, Alternative 4 would have a local, short- and long-term, minor to moderate, beneficial impact on rare, threatened, and endangered species and the biological ORVs in Wawona.

Summary of Alternative 4 Impacts. Overall, limits on facilities through management zoning in El Portal in combination with VERP would allow existing natural areas to remain relatively intact and would direct restoration and enhancement of degraded native habitats. Implementation of management zone limits would allow park management to limit visitation in specific management zones. The annual maximum limit on park visitation under Alternative 4 is lower than current annual visitation and is likely to be lower than under Alternative 1, resulting in minor, beneficial impacts to rare, threatened, and endangered species. The revised river corridor boundary at El Portal and management zones restrictive of development would protect the biological ORVs within the El Portal Administrative Site, resulting in beneficial effects on rare, threatened, and endangered species. Alternative 4 would result in a local, short- and long-term, minor to moderate, beneficial impact on rare, threatened, and endangered species and the biological ORVs within the river corridor.

Cumulative Impacts

Cumulative effects to rare, threatened, and endangered species from past, present, and foreseeable future actions are the same as those described for Alternative 1. Past, present, and reasonably foreseeable future actions in the immediate vicinity of Yosemite National Park could have a long-term, minor, beneficial effect on rare, threatened, and endangered species and the biological ORVs within the Merced River corridor. Overall, these cumulative actions, in combination with Alternative 4, could have a net local, short- and long-term, minor to moderate, beneficial effect on parkwide rare, threatened, and endangered species and the biological ORVs of the Merced River corridor.

Impairment

Alternative 4 would have a local, short- and long-term, minor to moderate, beneficial effect on parkwide rare, threatened, and endangered species and the biological ORVs of the Merced River corridor and therefore would not impair these resources for future generations.

Air Quality

Analysis

The following discussion provides an overview of the types of impacts to air quality that could occur within each segment of the Merced River corridor associated with Alternative 4.

In general, under Alternative 4 air quality in the river corridor would continue to be influenced by local sources within the park and regional sources upwind of the park, and would continue to be subject to emissions trends similar to those described under Alternative 1.

The main differences between air quality conditions under Alternatives 1 and 4 would result from implementation of management zone limits; implementation of a VERP program, and construction or demolition activities and long-term impacts on air quality that could occur as a result of the revised river corridor boundary in the El Portal segment of the river.

Impacts in Wilderness. Under Alternative 4, the management zone limits for Wilderness segments in the river corridor would be set at the existing trailhead quota system limits. Under Alternative 4, use of trails in wilderness areas would continue consistent with conditions under Alternative 1.

Implementation of management zone limits and the VERP program for Wilderness segments would result in additional monitoring of indicators. Implementation of the VERP program under Alternative 4 would be the same as described under Alternative 2. The impacts of management actions based on management zone limits and VERP monitoring would vary depending on the action. Less restrictive management actions would be expected to have no effect on air quality in wilderness areas. The most restrictive measures could have beneficial effects by reducing the number of people recreating within the river corridor, as discussed under Alternative 2. The number of people could also be limited through a reduction of trailhead quotas based on management zone limit monitoring. These more restrictive measures could result in fewer people using wilderness areas and could indirectly result in fewer vehicle trips (and associated vehicle-miles traveled), and a corresponding reduction in ozone precursor and particulate matter emissions in other areas of the park. On this basis, management actions resulting from management zone limit and VERP monitoring could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Overall, wilderness areas would continue to be largely free of effects from local emissions sources (with the exception of prescribed fires), but would be subject to regionwide emissions trends. Alternative 4 VERP program would be likely to prevent visitor use from adversely affecting ORVs in the Wilderness segments. With respect to ozone and particulate matter, implementation of management zone limits and the VERP program would be expected to have a local, long-term, negligible, beneficial impact on air quality in Wilderness segments compared to Alternative 1.

Impacts in Yosemite Valley. Like Alternative 1, under Alternative 4 air quality in Yosemite Valley would continue to be influenced by local sources within the park and by regional sources upwind of the park. The effects of local emissions sources would continue to be concentrated in the

Valley. Emissions from local stationary, area, and mobile sources would follow emissions trends and continue to be regulated in a manner consistent with Alternative 1. In the short term, visitor levels and associated traffic in the Valley would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than under Alternative 1 because of management zone limits and VERP management action.

Implementation of management zone limits and the VERP program under Alternative 4 could have an indirect, beneficial impact on air quality in the Valley. Park management would manage visitor use in the Valley to ensure that the limits for each management zone are not exceeded. If future visitor use levels were to exceed the management zone limits in the Valley, management would take actions to restrict or reduce visitor use levels to the adopted limits. Restrictions on the number of visitors in the Valley in the long term would likely result in fewer people in the Valley and could indirectly result in fewer vehicle trips (and associated vehicle-miles traveled) and a corresponding reduction in ozone precursor and particulate matter emissions.

The VERP program under Alternative 4 would be the same as described under Alternative 2. The impacts of management actions based on VERP monitoring would vary depending on the action. In general, management actions such as visitor education would be expected to have little or no effect on air quality. More restrictive measures could result in reduced visitor use, fewer vehicle trips (and associated vehicle-miles traveled), and a corresponding reduction in ozone precursor and particulate matter emissions, which could result in local, long-term, negligible, beneficial impacts on air quality in the Valley.

Management actions such as site hardening, construction of new facilities or removal of existing facilities could result in substantial quantities of dust, and, as a result, local visibility and PM-10 and PM-2.5 concentrations could be adversely affected. Without mitigation, dust raised by construction resulting from some management actions could have a moderate but temporary effect in the immediate vicinity of individual sites. Implementation of mitigation measures (as described in Appendix B) would reduce the temporary and localized air quality impacts from construction activities to a minor level. On this basis, these types of management actions could result in localized, short-term, minor, adverse impacts on air quality. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas.

Overall, Alternative 4 is expected to prevent visitor use from adversely affecting ORVs in the Valley. Certain VERP management actions could result in localized short-term, minor, adverse impacts on air quality during construction activities. However, with respect to ozone and particulate matter, implementation of management zone limits and the VERP program would likely have an overall local, long-term, negligible, beneficial impact on air quality in the Valley compared to Alternative 1 because any increases in users and associated vehicle use would likely be lower.

Impacts in the Gorge. Like Alternative 1, under Alternative 4 areas zoned Untrailed (1A), Open Space and Undeveloped Open Space (2A, 2A+), and Discovery (2B) in the Gorge segment would continue to be free of effects from local emissions sources (except for prescribed fires), but would be subject to regionwide emissions trends. Areas zoned Day Use (2C), Attraction (2D) and Park Operations and Administration (3C) would continue to experience a local, long-term, minor, adverse effect due to the concentration of vehicular emissions in those areas. In the short term, user levels and associated vehicle use in the Gorge segment would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, user numbers and associated vehicle use could increase, but such increases would likely be lower than Alternative 1 due to annual and management zone limits and VERP management actions.

Implementation of management zone limits and the VERP program under Alternative 4 could have an indirect, beneficial impact on air quality in the Gorge segment. Park management would manage visitor use in the Gorge segment to ensure that the limits for each management zone are not exceeded. If future visitor use levels were to exceed the management zone limits in the gorge, park management would take actions to restrict or reduce visitor use levels to the adopted limits. Restrictions on the number of visitors in the Gorge segment in the long term would likely result in fewer people in the Merced River gorge and could indirectly result in fewer vehicle trips (and associated vehicle-miles traveled) and a corresponding reduction in ozone precursor and particulate matter emissions.

Implementation of the VERP program under Alternative 4 would be the same as described under Alternative 2.

The impacts of management actions based on VERP monitoring would vary depending on the action. In general, management actions such as visitor education would be expected to have little or no effect on air quality. More restrictive measures could have beneficial effects by reducing the number of vehicles and buses, or the number of people recreating within the river corridor. These more restrictive measures could result in fewer people in the Gorge segment and could indirectly result in fewer vehicle trips (and associated vehicle-miles traveled) and a corresponding reduction in ozone precursor and particulate matter emissions. On this basis, management actions could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Management actions such as site hardening, construction of new facilities, or removal of existing facilities could have local, short-term, minor, adverse impacts on air quality related to construction, as discussed under the Yosemite Valley segment above. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas.

Overall, Alternative 4 would likely prevent visitor use from adversely affecting ORVs in the Gorge segment. Certain management actions in response to VERP monitoring could result in localized short-term, minor, adverse impacts on air quality during construction activities. However, with respect to ozone and particulate matter, implementation of management zone limits and the VERP program would be expected to have an overall local, long-term, negligible, beneficial impact on air quality in the Gorge segment compared to Alternative 1 because in the number of users and associated vehicle use would be lower.

Impacts in El Portal. Under Alternative 4, the El Portal segment of the river corridor boundary would delineate the ORVs along the river. The zoning for this alternative would include more restrictive zoning than any other alternative for much of the area south of the river. While portions of the Trailer Village/Abbieville area would be zoned for Park Operations and Administration (3C), the area west and south of Abbieville would be zoned Discovery (2B) and the area east of Abbieville would be zoned Open Space (2A). The area north of the river and east of Crane Creek would be zoned 2B except for the existing developed areas at Railroad Flat, Rancheria Flat, and Old El Portal. These existing developed areas and the Middle Road area would be zoned 3C. This zoning plan would be the most restrictive of development opportunities for park administrative facilities and allow a more limited amount of development potential. The total acreage within the El Portal segment of the river corridor under Alternative 4 would be 814 acres, which would be four times greater than the boundary presented under Alternative 1.

The proposed boundary and zoning designations for the El Portal segment would likely result in some development or redevelopment within the 3C zones. Any construction or redevelopment that would occur could result in significant quantities of dust, and, as a result, local visibility and PM-10 and PM-2.5 concentrations could be adversely affected. Without mitigation, dust raised by construction resulting from the revised boundary in the El Portal segment could have a major but temporary effect in the immediate vicinity of individual sites. Implementation of Best Management Practices listed in Appendix B would reduce the temporary and localized air quality impacts from construction activities to a minor level; therefore, the construction associated with the El Portal segment management zoning under Alternative 4 could result in localized, short-term, minor, adverse impacts on air quality. However, overall, development in El Portal under Alternative 4 would be less intensive than under Alternative 1.

In the short term, visitor levels in El Portal would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, the number of visitors and associated vehicle use could increase, but such increases would likely be lower than under Alternative 1.

Implementation of management zone limits and the VERP program associated with Alternative 4 could have an indirect, beneficial impact on air quality in the El Portal segment. Park management would manage visitor use in El Portal to ensure that the limits for each management zone are not exceeded. If future visitor use levels exceeded the management zone limits in El Portal, park management would take actions to restrict or reduce visitor use levels to the adopted limits. Restrictions on the number of visitors in El Portal in the long term would likely result in fewer people in El Portal and could indirectly result in fewer vehicle trips (and associated vehicle-miles traveled) and a corresponding reduction in ozone precursor and particulate matter emissions. However, since the El Portal segment includes Highway 140, a primary entrance road to the park, reductions in vehicle trips through the segment would be nominal.

Implementation of the VERP program under Alternative 4 would be the same as described under Alternative 2. In general, management actions such as visitor education would be expected to have little or no effect on air quality. More restrictive measures could have beneficial effects by reducing the number of vehicles or buses, or the number of users recreating within the river corridor. These more restrictive measures could result in fewer vehicle trips (and associated vehicle-miles traveled), and a corresponding reduction in ozone precursor and particulate matter emissions. On this basis, management actions could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Management actions that result in site hardening, construction of new facilities, or removal of existing facilities could have local, short-term, minor, adverse impacts on air quality during construction. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas. Site-hardening activities or construction of new facilities would likely only occur in the areas zoned Park Operations and Administration (3C).

Overall, Alternative 4 is expected to prevent visitor use from adversely affecting ORVs in the El Portal segment. Development associated with the revised El Portal boundary (even though development would be highly restricted) and certain VERP management actions could result in localized, short-term, minor, adverse impacts on air quality during construction or redevelopment activities. However, development in El Portal under Alternative 4 would be less intensive than under Alternative 1. Overall, with respect to ozone and particulate matter, management zone limits and the VERP program would likely have an overall local, long-term, negligible, beneficial impact on air quality in the El Portal segment compared to Alternative 1 because visitor numbers and associated vehicle use would likely be lower.

Impacts in Wawona. Like Alternative 1, under Alternative 4 air quality in the Wawona segments of the river corridor would continue to be influenced by local sources within the park and by regional sources upwind of the park. The effects of local emissions sources would continue to be concentrated in Wawona. Emissions from local stationary, area, and mobile sources would follow emissions trends and continue to be regulated in a manner consistent with Alternative 1.

In the short term, visitor levels and associated traffic in Wawona would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than under Alternative 1.

Implementation of management zone visitor limits and the VERP program under Alternative 4 could have an indirect, beneficial impact on air quality in Wawona. Park management would manage visitor use in Wawona to ensure that the limits for each management zone are not exceeded. If future visitor use levels were to exceed the management zone limits in Wawona, park management would take actions to restrict or reduce visitor use levels to the adopted limits. Restrictions on the number of visitors in Wawona in the long term would likely result in fewer people in Wawona and could indirectly result in fewer vehicle trips, associated vehicle-miles traveled and corresponding ozone precursor and particulate matter emissions.

Implementation of the VERP program under Alternative 4 would be the same as described under Alternative 2. Management actions could range from less restrictive measures (such as visitor education and site hardening) to more restrictive actions (reducing visitor activities or access in certain areas). In general, less restrictive management actions would likely have little or no effect on air quality. More restrictive measures could result in local, long-term, negligible, beneficial impacts on air quality in the park and region.

Conversely, management actions that result in site hardening, construction of new facilities, or removal of existing facilities could have local, short-term, minor, adverse impacts on air quality related to construction. Some of the site-hardening activities (e.g., boardwalks and observation platforms) could also result in localized, long-term, negligible, beneficial air quality impacts by reducing dust from hikers or visitor use in exposed soil areas.

Overall, Alternative 4 is expected to prevent visitor use from adversely affecting ORVs in Wawona. Certain management actions in response to VERP monitoring could result in localized, short-term, minor, adverse impacts on air quality during construction activities. However, with respect to ozone and particulate matter, implementation of management zone limits and the VERP program would likely have an overall local, long-term, negligible, beneficial impact on air quality in Wawona segments compared to Alternative 1 because any increases in visitor numbers and associated vehicle use would likely be lower.

Summary of Alternative 4 Impacts. Overall, Alternative 4 is expected to prevent visitor use from adversely affecting ORVs. Certain management actions in response to management zone use limit and VERP monitoring, and development that could occur as a result of the revised river corridor boundary in El Portal, could result in localized, short-term, minor, adverse impacts on air quality during construction activities. However, development in El Portal under Alternative 4 would be less intensive than under Alternative 1. Overall, Alternative 4 is expected to have a local, long-term, negligible, beneficial impact on air quality within the Merced River corridor compared to Alternative 1 because user numbers and associated vehicle use would be lower.

Cumulative Impacts

Cumulative effects to air quality under Alternative 4 would be the same as identified and described under Alternative 1.

Based on the revised river corridor boundary in El Portal and implementation of certain VERP management actions, Alternative 4 could contribute to the cumulative number of construction sites in and near the corridor. In most instances, construction projects undertaken as part of Alternative 4 would not overlap in time and space with cumulative construction projects; therefore, the local, short-term, major, adverse effects on air quality due to construction activities could be reduced to a minor intensity with implementation of Best Management Practices. Over the long term, with respect to ozone, conditions in the river corridor would be determined almost entirely by regional emissions trends. The local, long-term, negligible, beneficial impact on air quality within the Merced River corridor associated with Alternative 4 (compared to Alternative 1) would have little effect on overall ozone levels in Yosemite National Park. As discussed under Alternative 1, the long-term, regional effect would be moderate and beneficial, primarily due to the emissions reductions expected with implementation of ongoing state and federal mobile-source control programs. With respect to particulate matter, conditions in the river corridor would be determined by both regional sources and local sources, and the relative influence of these two types of sources would vary on a daily and seasonal basis. Given the opposing emissions trends between primary and secondary sources of particulate matter and the varying relative contributions of regional and local emissions sources, it would be speculative to conclude that the combined effect of cumulative actions and the benefits of Alternative 4 (compared to Alternative 1) would be beneficial or adverse with respect to particulate matter; however, the opposing emissions trends would tend to diminish the magnitude of the effect, regardless of whether the effect would be beneficial or adverse.

Impairment

Management actions in response to management zone limit and VERP monitoring, and development that could occur as a result of the revised river corridor boundary in El Portal, could result in localized, short-term, minor, adverse impacts on air quality during construction activities. However, development in El Portal under Alternative 4 would be less intensive than under Alternative 1. Overall, Alternative 4 would likely have a local, long-term, negligible, beneficial impact on air quality within the Merced River corridor compared to Alternative 1 because user numbers and associated vehicle use would likely be lower. Therefore, Alternative 4 would not impair air quality in the park.

Noise

Analysis

The following discussion provides an overview of the types of impacts to the ambient noise environment associated with Alternative 4 that could occur within each segment of the Merced River corridor.

Under Alternative 4, the acoustical environment in wilderness areas would generally continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights. The acoustical environment in nonwilderness areas would continue to be shaped by human-caused sources of noise and by natural sources of sound. The ambient noise environment in Yosemite National Park would follow similar trends as described under Alternative 1.

The main differences between noise conditions under Alternative 4 and those under Alternative 1 would relate to the following issues: implementation of the VERP program with management zone limits; and the construction or demolition activities and long-term impacts on the noise environment that could occur as a result of the change in management zoning resulting from adoption of the revised corridor boundary in the El Portal segment of the river.

Impacts in Wilderness. The enjoyment of natural river sounds is integrated into the recreation ORV in designated wilderness areas. That aspect would continue to be considered for protection and enhancement in wilderness areas.

Under Alternative 4, the management zone limits for all Wilderness segments would be set at the existing wilderness trailhead quotas. Under Alternative 4, use of trails in wilderness areas would continue consistent with existing conditions and conditions under Alternative 1.

Implementation of the VERP program with management zone limits for the wilderness areas would result in additional monitoring of indicators within wilderness areas. Implementation of the VERP program with management zone limits under Alternative 4 would be the same as described under Alternative 2. The impacts of management actions implemented as a result of management zone limits and the VERP program would vary depending on the action taken. VERP management actions could range from softer measures (visitor education efforts) to more restrictive measures (increased enforcement of existing regulations, restrictions on certain activities [such as stock use], and restrictions on level of use [closure of certain areas]). Less restrictive measures would be expected to result in local, short- and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures, such as the reduction of trailhead quotas or restrictions on stock use, could have beneficial effects by reducing the number of people recreating within the river corridor, and the River Protection Overlay in particular, and the number of encounters with other parties and the number of people at one time at selected sites in wilderness areas. In addition, numbers of people could be limited through reduction of wilderness trailhead quotas resulting from management zone limits monitoring. These more restrictive measures would result in local, short- and long-term, negligible to minor, beneficial impacts on the enjoyment of natural river sounds and the broader ambient noise environment in wilderness areas.

Overall, the acoustical environment in wilderness areas would, however, continue to experience intrusive noise generated by high-altitude aircraft overflights. In some wilderness areas, such overflights would continue to be the principal source of adverse noise impacts. Noise from high-altitude aircraft overflights may worsen over the long term, if the national trend in the number of aircraft flights continues to increase. The management zone limits and VERP program would not address conditions related to aircraft overflights.

Due to the seasonal nature of visitation to the Wilderness segments of the river corridor coupled with the limited number of visitors allowed into the river corridor in wilderness areas as a result of the park's existing trailhead quota system, implementation of the management zone limits and VERP program overall would be expected to have a local, long-term, negligible to minor, beneficial impact on the natural enjoyment of river sounds portion of the recreation ORV and the broader ambient noise environment in wilderness areas relative to Alternative 1.

Impacts in Yosemite Valley. As under Alternative 1, under Alternative 4 the acoustical environment in the Valley would generally continue to be shaped by human-caused sources of noise and by natural sources of sound. The ambient noise environment in wilderness and nonwilderness areas of the Valley would follow trends similar to those described under Alternative 1.

In the short term, visitor levels and associated traffic in the Valley would be reduced to lower than existing levels, similar to Alternative 1. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than Alternative 1 as a result of management zone and annual corridorwide visitation limits and VERP monitoring and management.

Implementation of management zone limits and the VERP program could have an indirect beneficial impact on the ambient noise environment in the Valley. Park management would manage visitor use in the Valley to ensure that the limits for each management zone are not exceeded. If future visitor use levels exceeded the management zone limits in the Valley, management would take actions to restrict or reduce visitor use levels to the adopted limits. Restrictions on the number of visitors in the Valley in the long term would likely result in fewer people in the Valley and could indirectly result in fewer vehicle trips on park roads, fewer associated vehicle-miles traveled, and correspondingly lower roadside noise levels.

The VERP program under Alternative 4 would be the same as described under Alternative 2. Management actions such as visitor education would be expected to result in local, short- and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures could have beneficial noise effects by reducing the number of vehicles, buses, or the number of people recreating with the river corridor. These more restrictive measures could also result in fewer vehicle trips and lower roadside noise levels. On this basis, management actions could result in local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the Valley.

Conversely, implementation of the management actions that result in site hardening, construction of new facilities, or removal of existing facilities could result in construction or demolition activities that could generate substantial amounts of noise during the temporary construction period. At each individual construction or demolition site, the related noise impact would vary depending upon a number of factors, such as the number and types of equipment in operation on a given day, their usage rates, the level of background noise in the area, and the distance between sensitive uses and the construction site. However, in general, given the low background noise levels away from park roadways and the expectation of visitors that the environment be free of excessive noise sources (if not naturally quiet), the impact from construction or demolition activities would generally be local, short term, moderate, and adverse. Implementation of best management practices listed in Appendix B would reduce the temporary and localized noise impacts from equipment associated with construction or demolition activities from a moderate to a minor level. On this basis, these types of management actions could result in localized, short-term, minor, adverse impacts on the ambient noise environment related to their construction.

Overall, Alternative 4 would be expected to prevent visitor use from adversely affecting ORVs. Certain management actions implemented in response to VERP monitoring could result in localized, short-term, minor (with implementation of best management practices), adverse impacts on the ambient noise environment during construction activities. However, taken as a whole, implementation of the management zone limits and the VERP program would be expected to have local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the Valley relative to Alternative 1, since visitor numbers, associated vehicle use and corresponding noise levels would likely be lower.

Impacts in the Gorge. As under Alternative 1, under Alternative 4, the acoustical environment in areas zoned 1A, 2A, 2A+, and 2B would continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights and distant roadway noise. The acoustical environment in areas zoned 2C, 2D and 3C would continue to be shaped by human-caused sources of noise and by natural sources of sound. The ambient noise environment in the gorge area would follow trends similar to those described under Alternative 1. Areas zoned 2C, 2D and 3C would continue to experience a local, long-term, minor, adverse effect due to the concentration of vehicular noise in those areas.

In the short term, visitor levels and associated vehicle use in the Gorge segment would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than Alternative 1 due to management zone limit and VERP monitoring and resulting management actions.

Implementation of management zone limits and the VERP monitoring and management program could have an indirect beneficial impact on the ambient noise environment in the Gorge segment. Park management would manage visitor use in the Gorge segment to ensure that the limits for each management zone are not exceeded. If future visitor use levels exceeded the management zone limits in the Gorge segment, management would take actions to restrict or reduce visitor use levels to the adopted limits. Restrictions on the number of visitors in the Gorge area in the long term would likely result in fewer people in the Gorge segment and could indirectly result in fewer vehicle trips on park roads, fewer associated vehicle-miles traveled, and correspondingly lower roadside noise levels.

Implementation of the VERP program with management zone limits under Alternative 4 would be the same as described under Alternative 2. Management actions could range from less restrictive measures such as education and site hardening, to more restrictive actions related to reducing visitor activities or access in certain areas. In general, educational measures would be expected to result in local, short and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures could have beneficial effects by reducing the number of vehicles, buses, or the number of people recreating within the river corridor. These more restrictive measures could also result in fewer vehicle trips and lower roadside noise levels.

On this basis, management actions could result in local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the Gorge segment.

Conversely, implementation of management actions that include site-hardening activities, construction of new facilities or removal of existing facilities could have local, short-term, minor (with implementation of best management practices), adverse noise effects related to their construction, as discussed under the Yosemite Valley segment above.

Overall, Alternative 4 would be expected to prevent visitor use from adversely affecting ORVs. Certain management actions implemented in response to VERP monitoring could result in localized, short-term, minor to moderate (with implementation of best management practices), adverse impacts on the ambient noise environment during construction activities. Overall, implementation of management zone limits and the VERP program would be expected to have local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the Gorge segment relative to Alternative 1, since visitor numbers, associated vehicle use and corresponding noise levels would likely be lower.

Impacts in El Portal. Under Alternative 4, the El Portal segment of the river provides for a boundary that delineates the ORVs north of the river includes all of the land in the El Portal Administrative Site south of the river. The zoning in El Portal under this alternative would include more restrictive zoning than any other alternative for much of the area south of the river. While portions of the Trailer Village/Abbieville would be zoned for Park Operations and Administration (3C), the area to the west and south of Abbieville would be zoned Discovery (2B), and the area to the east of the Abbieville area would be zoned for Open Space (2A). The area north of the river and east of Crane Creek would be zoned Discovery (2B), except for the existing developed areas at Railroad Flat, Rancheria Flat, and Old El Portal. These existing developed areas and the Middle Road area would be zoned for Park Operations and Administration. This zoning would be the most restrictive of development opportunities for park administrative facilities, and would allow for a more limited amount of development potential. The total acreage within the El Portal segment of the river corridor under Alternative 4 would be 814 acres, which would be four times greater than the boundary presented under Alternative 1.

The proposed boundary and zoning for the El Portal segment would be likely to result in limited additional development or redevelopment within the 3C areas. Nonetheless, the ambient noise environment in these zones could be influenced by noise from any construction or demolition activities that could occur. At each individual construction or demolition site, the related noise impact would vary depending upon a number of factors, as described under the Yosemite Valley segment above. However, in general, given the low background noise levels away from park roadways and the expectation of visitors that the environment be free of excessive noise sources (if not naturally quiet), the impact from construction or demolition activities would generally be local, short term, moderate, and adverse. Implementation of mitigation measures described in Appendix B would reduce the temporary and localized noise impacts from equipment associated with construction or demolition activities from a moderate to a minor level. On this basis, the construction associated with the management zoning under Alternative 4 could result in localized, short-term, minor, adverse impacts on the ambient noise environment. However, overall, development in El Portal under Alternative 4 would be less intensive than under Alternative 1.

In the short term, visitor levels in El Portal would remain approximately the same as existing levels. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would be lower than Alternative 1 due to management zone limits and the VERP program.

Implementation of management zone limits and the VERP program could have an indirect beneficial impact on the ambient noise environment in the El Portal area. Park management would manage visitor use in El Portal to ensure that the limits for each management zone are not exceeded. If future visitor use levels exceeded the management zone limits in El Portal, management would take actions to restrict or reduce visitor use levels to the adopted limits. Restrictions on the number of visitors in El Portal in the long term would likely result in fewer people in El Portal and could indirectly result in fewer vehicle trips on park roads, fewer associated vehicle-miles traveled, and correspondingly lower roadside noise levels. However, since the El Portal segment includes Highway 140, a primary entrance road to the park, reductions in vehicle trips through the segment would be nominal.

Implementation of the VERP program with management zone limits under Alternative 4 would be the same as described under Alternative 2. The impacts of management actions implemented as a result of VERP monitoring would vary depending on the action taken. Management actions could range from less restrictive measures such as education and site hardening, to more restrictive actions related to reducing visitor activities or access in certain areas. Management actions would be more likely to be restrictive of levels and types of visitor use in areas zoned 2A and 2B, as these areas are typically more sensitive to visitor impacts and are managed for lower visitor concentrations. Management actions taken to address standards in the areas zoned 3C would likely focus more on education, site hardening, and other management actions that continue to allow for visitor use, as these areas have been identified as being appropriate for higher levels of visitor use.

In general, management actions such as visitor educational measures would be expected to result in local, short- and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures could also result in fewer vehicle trips and lower roadside noise levels. On this basis, management actions could result in local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the El Portal area.

Conversely, implementation of management actions that include site-hardening activities, construction of new facilities or removal of existing facilities could have local, short-term, minor (with implementation of best management practices), adverse noise effects related to their construction, as discussed under the Yosemite Valley segment above. Site-hardening activities or construction of new facilities would only occur in areas zoned 3C.

Overall, Alternative 4 would be expected to prevent visitor use from adversely affecting ORVs. Development associated with implementation of the El Portal that delineates the ORVs along the El Portal segment of the river (even though development would be highly restricted) and certain management actions implemented in response to VERP monitoring could result in localized, short-term, minor (with implementation of best management practices), adverse impacts on the ambient noise environment during construction or redevelopment activities. However, development in El Portal under Alternative 4 would be less intensive than under Alternative 1 as the corridor area would be increased. Overall, implementation of management zone limits and the VERP program would be expected to have local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in the El Portal area relative to Alternative 1, since visitor numbers, associated vehicle use and corresponding noise levels would likely be lower.

Impacts in Wawona. As under Alternative 1, under Alternative 4 the acoustical environment in Wawona would generally continue to be shaped by human-caused sources of noise and by natural sources of sound. The ambient noise environment in Wawona would follow similar trends as described under Alternative 1.

In the short term, visitor levels and associated traffic in Wawona would remain approximately the same as existing levels, similar to Alternative 1. Over the long term, visitor numbers and associated vehicle use could increase, but such increases would likely be lower than for Alternative 1 as a result of management zone limits and the VERP program.

Implementation of management zone limits and the VERP program under Alternative 4 could have an indirect beneficial impact on the ambient noise environment in Wawona. Park management would manage visitor use in Wawona to ensure that the limits for each management zone are not exceeded. If future visitor use levels exceeded the management zone limits in Wawona, management would take actions to restrict or reduce visitor use levels to the adopted limits. Restrictions on the number of visitors in Wawona in the long term would likely result in fewer people in Wawona and could indirectly result in fewer vehicle trips on park roads, fewer associated vehicle-miles traveled, and correspondingly lower roadside noise levels.

Implementation of the VERP program with management zone limits under Alternative 4 would be the same as described under Alternative 2. In general, management actions such as visitor education would be expected to result in local, short- and long-term, negligible, beneficial impacts on the ambient noise environment. More restrictive measures could have beneficial effects by reducing the number of vehicles or buses, or the number of people recreating within the river corridor. These more restrictive measures could also result in fewer vehicle trips and lower roadside noise levels. On this basis, management actions could result in local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in Wawona.

Conversely, implementation of management actions that include site-hardening activities, construction of new facilities or removal of existing facilities could have local, short-term, minor (with implementation of best management practices), adverse noise effects related to their construction, as discussed under the Yosemite Valley segment above.

Overall, Alternative 4 would be expected to prevent visitor use from adversely affecting ORVs. Certain management actions implemented in response to VERP monitoring could result in localized short-term, minor to moderate (with implementation of best management practices), adverse impacts on the ambient noise environment during construction activities. However, taken as a whole, implementation of management zone limits and the VERP program would be expected to have local, long-term, negligible to minor, beneficial impacts on the ambient noise environment in Wawona relative to Alternative 1 since any increases in visitor numbers, associated vehicle use and corresponding noise levels would likely be lower.

Summary of Alternative 4 Impacts. As under Alternative 1, the acoustical environment in wilderness areas would not be affected by Alternative 4, but would continue to be shaped largely by natural sources of sound punctuated by intrusive noise generated by high-altitude aircraft overflights. The acoustical environment in nonwilderness areas would continue to be shaped by human-caused sources of noise and by natural sources of sound.

Overall, implementation of management zone limits and the VERP program through monitoring of indicators for each zone, coupled with the implementation of appropriate management actions when required based on monitoring results, would be expected to prevent visitor use from adversely affecting ORVs. Certain management actions implemented in response to VERP monitoring, and development that could occur as a result of the revised river corridor boundary in El Portal could result in localized, short-term, minor (with implementation of best management practices), adverse impacts on the ambient noise environment during construction activities. However, development in El Portal under Alternative 4 would be less intensive than under Alternative 1 as the corridor area would be increased. Less intensive development could have a local, long-term, negligible to minor, beneficial impact on the ambient noise environment in the El Portal area.

Overall, implementation of Alternative 4 would be expected to have a local, long-term, negligible, beneficial impact on ambient noise levels in nonwilderness areas within the Merced River corridor relative to Alternative 1 since any increases in visitor numbers, associated vehicle use and corresponding noise levels would likely be lower due to management zone limits and the VERP program.

Cumulative Impacts

Cumulative effects to the ambient noise environment are described under Alternative 1.

Based on the revised river corridor in El Portal and implementation of certain management actions that could be implemented in response to VERP monitoring, Alternative 4 could contribute to the cumulative number of construction sites in and near the corridor; in most instances, construction projects undertaken as part of Alternative 4 would not overlap in time and space with cumulative construction projects, and thus, the local, short-term, adverse effects on noise due to construction activities could be reduced to a moderate intensity with implementation of best management practices. Over the long term, in wilderness areas, noise impacts in the corridor would be determined almost entirely by cumulative trends in air travel rather than by in-park noise sources under Alternative 4; as discussed under Alternative 1, if the national trend in air travel continues to increase, it could have a local, long-term, minor, adverse effect on the ambient noise environment. In nonwilderness areas, the cumulative actions that would tend to reduce motor vehicle trips would result in a local, long-term, moderate, adverse effect on noise levels in the immediate vicinities of such facilities due to the concentration of vehicular activity, but could result in a local, long-term, moderate, beneficial effect in the eastern portion of the Valley due to reduced vehicle trips and associated noise, and related to the type of bus technology used for transit purposes. Taken as a whole, Alternative 4 with implementation of the management zone limit and VERP program and its more restrictive development scheme in the El Portal area would have a local, long-term, negligible to minor, beneficial impact on the ambient noise environment in the Merced River corridor relative to Alternative 1.

Impairment

Management actions implemented in response to VERP monitoring, and development that could occur as a result of the revised river corridor boundary in El Portal, could result in localized short-term, minor (with implementation of best management practices), adverse impacts to the noise environment and the soundscapes in the vicinities of construction or demolition projects. However, development in El Portal under Alternative 4 would be less intensive than under Alternative 1 as the corridor area would be increased. Overall, Alternative 4 with implementation of the management zone limit and VERP program and its more restrictive development scheme in the El Portal area would have a local, long-term, negligible to minor, beneficial impact on the ambient noise environment in the Merced River corridor relative to Alternative 1, since any increases in visitor numbers, associated vehicle use and corresponding noise levels would likely be lower due to management zone limits and VERP monitoring and management. Therefore, implementation of Alternative 4 would not impair park soundscapes.

Cultural Resources

Archeological Resources

Analysis

The following discussion provides an overview of the types of impacts to archeological resources that could occur within each segment of the Merced River corridor under Alternative 4 from implementation of management zone limits in addition to a VERP program. Effects on archeological resources due to the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Management actions associated with the redirection of visitors from areas with known archaeological resources and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Archeological resources in the Yosemite Wilderness include historic and prehistoric resources related to occupation and homesteading, hunting, travel and trade, the U.S. Cavalry, and wilderness tourism.

User capacity within wilderness areas of Yosemite National Park is addressed through a trailhead quota system and monitoring of wilderness resource conditions. The management zone limits for the Wilderness segments would be set at the existing trailhead quota numbers.

Since the management zone limits would be set at existing trailhead quota levels, no additional management actions would need to be taken to implement the limits in the wilderness areas. Implementation of the management zone limits in wilderness would have no effect on archeological resources within Wilderness segments compared to the No Action Alternative.

Implementation of the VERP program for the wilderness areas under Alternative 4 would be the same as described under Alternative 2. Education efforts would be expected to result in local, short and long-term, minor, beneficial impacts on archeological resources. More restrictive measures would be expected to have local, long-term, moderate, beneficial effects on the archeological resources due a potential decrease in degradation of archeological deposits.

The combination of management zone limits with VERP monitoring would be expected to result in a local, long-term, negligible benefit on archeological resources in the wilderness compared to the No Action Alternative. This benefit would be achieved by ensuring that resource conditions in wilderness areas are maintained within established standards through enforcement of management zone limits and additional restrictions as needed to meet the VERP standards. Implementation of restrictive measures that reduce wilderness use beyond the existing trailhead quotas would likely have a local, long-term, negligible, beneficial impact on archeological resources by improving the natural environment.

Impacts in Yosemite Valley. Archeological resources in Yosemite Valley include several historic and prehistoric sites and districts that relate to homesteading, long-term and seasonal occupation, early tourism, the U.S. Cavalry, historic roads and trails, and early park administration.

Management zone limits for the Yosemite Valley segment were set based on the management zoning for the area, available facilities, and existing levels of use. The park would manage visitor use within the Valley to ensure that the limits for each management zone are not exceeded. If visitor numbers in any zone exceed the limits, management would be required to take actions to reduce visitor numbers in that zone. Management actions could include visitor education regarding different areas to visit, closure of certain areas, removal of trails and or parking that facilitates access to certain areas, removal of other visitor facilities that might encourage use (such as picnic tables and/or restrooms), and requiring permits or reservations for accessing certain areas within the Valley.

These management actions would result in a local, long-term, moderate, beneficial effect on archeological resources within Yosemite Valley, because these measures are likely to lower visitor levels in the Valley in the long term and would therefore decrease visitor-related damage (such as vandalism, site collection, erosion, and trampling) compared to the No Action Alternative.

In addition to managing visitor numbers within the Valley, Alternative 4 would implement a VERP program. The effects of VERP under this alternative would be the same as described under Alternative 2. Educational measures would be expected to have local, short and long term, negligible to minor, beneficial effects on archeological resources. More restrictive measures would benefit the archeological resources by reducing opportunities for site degradation. These measures could result in short-term or long-term, moderate, beneficial impacts to archeological resources. Site hardening activities could result in adverse effects on archeological resources if proposed facilities would damage deposits or increase the likelihood of visitor-linked damage. These actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement. The effects of these actions would likely be local, long-term, negligible to minor, and adverse. Alternative 4 would have an overall local, long-term, moderate, beneficial impact on archeological resources, except for site-hardening activities, which have the potential to cause a local, long-term, minor, adverse impact on archeological resources.

Overall, Alternative 4 is expected to have a moderate benefit to archeological resources. Where educational measures are implemented, the effect on archeological resources is expected to be long-term, negligible, and beneficial. Management actions that result in long-term, broad based restrictions could have long-term, moderate beneficial impacts to archeological resources. Other actions, such as site hardening, could have short-term to long-term, minor, adverse effects on archeological resources.

Impacts in the Gorge. Archeological resources in the Gorge segment include historic and prehistoric sites related to occupation, the Civilian Conservation Corps, early roads and trails, road development, and early tourism.

Management zone limits for the Gorge segment would be based on the management zoning for these areas and available parking. The park would manage the number of visitors in the Gorge to ensure that the management zone limits are not exceeded. If the limits are exceeded, management would take actions to reduce visitor numbers. Since access to the Gorge is limited by the available parking, park management could reduce parking to reduce use levels. Management actions could also include instituting a day-use reservation program for entry into the park, or instituting entrance station closures when the limit is reached. These measures would control the overall number of people able to access the Gorge.

The results of these management actions would depend upon the management action taken. Management actions that reduce available access to the Gorge, such as removal of parking areas, would likely result in local, long-term, negligible, beneficial effects on archeological resources due to a return of the natural environment and a reduced likelihood of visitor-related damage.

Implementation of the management zone limits is expected to result in negligible effects in the short term because existing use in these areas are relatively low. In the long term, the level of use under this alternative would likely be lower than under the No Action Alternative. Since current use levels are low and there are few crowding problems, this reduction of use would provide local, long-term, negligible, benefits to archeological resources in the Gorge.

The effects of VERP under Alternative 4 would be the same as described under Alternative 2. Educational measures would be expected to result in local, short and long term, negligible to minor beneficial effects. More restrictive measures would be expected to provide for a less crowded and more natural environment. These measures could result in short-term or long-term, moderate, beneficial impacts to archeological resources. Site-hardening activities could result in some adverse effects on archeological resources but would be limited to the small areas designated for higher levels of development and use—areas zoned Attraction (2D) and Park Operations and Administration (3C). Because the park is mandated to protect the cultural ORV, the effects of new development would likely be local, long-term, negligible to minor, and adverse.

Overall, Alternative 4 is expected to have local, long-term, minor to moderate, beneficial impacts on archeological resources. Where educational measures are implemented, the effect is expected to be long term, negligible and beneficial. Management actions that result in long-term, broad based restrictions could have long-term, moderate, beneficial impacts to archeological resources. Other actions, such as site hardening, could have short-term to long-term, minor, adverse effects on archeological resources in the Gorge segment.

Impacts in El Portal. Archeological resources for El Portal consist of some of the oldest prehistoric sites within the Merced River corridor. Prehistoric and historic archeological sites and districts in El Portal include examples of villages, homesteads, early tourism, as well as the mining, railroad, and timber industries.

The boundary for the El Portal segment of the river in this alternative was based upon the locations of specific ORVs with primarily low-density zoning, except in limited developed areas. Under this alternative, there would be Open Space (2A) and Discovery (2B) zoning south of the river except in the Trailer Village/Abbieville area, which would be zoned Park Operations and Administration (3C). North of the river would be zoned 2B except for the pockets of existing development such as Railroad Flat, Rancheria, Middle Road and Old El Portal, which would be zoned 3C.

In the areas zoned 3C, additional development of facilities or removal of facilities could occur. If this development or removal occurred and earthmoving activities were required, then intact archeological resources, which are identified as a component of the cultural ORV, could be disturbed. This is considered a local, long-term, minor to major, adverse impact, and the intensity of impact would depend on the nature, location, and design of the facility to be developed or removed as well as the quantity and data potential of the archeological resource(s) affected. These actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement. Some of these areas contain archeological sites that could be impacted by these activities. When compared to the other alternatives, Alternative 4 would have less adverse impacts to archeological resources due to fewer acres zoned 3C. In this alternative, there would be less additional development or redevelopment within most areas of the El Portal segment, thus resulting in less potential for impacts to archeological resources.

New development would also be subject to the consistent set of criteria and considerations adopted in the Merced River Plan, as well as current park management policies. These management policies guide how actions could be implemented in order to minimize adverse effects to cultural resources. All ORVs must be protected on a segmentwide basis regardless of the zoning designation or whether the resources are in or outside of the river corridor boundary. Therefore, the adverse effect of new development on archeological resources within the segment would likely be, long term, and negligible.

In general, the river corridor boundary and management zoning under Alternative 4 would have a local, long-term, moderate to major, beneficial effect on archeological resources compared to Alternative 1, which would have a smaller river corridor and be less protective management zoning.

Implementation of management zone limits for this segment is expected to have negligible effects on archeological resources in the short term due to low levels of visitor use. In the long term, enforcement of management zone limits for this segment could limit future development, require removal of existing informal parking areas, or require additional restrictions on visitor activities such as rafting, kayaking, or fishing. Implementation of these types of measures would be expected to have local, long-term, minor to moderate, beneficial effects on archeological resources.

Implementation of a VERP program under Alternative 4 would have the same effects as described under Alternative 2. Educational measures would likely result in local, short and long term, negligible to minor, beneficial effects. More restrictive measures would likely result in short-term or long-term, moderate to major, beneficial impacts to archeological resources. Site hardening, could result in some adverse effects on archeological resources. Since the park is mandated to protect the cultural ORVs, the effects of new development would likely be local, long-term, negligible, and adverse.

Short- and long-term, adverse effects to archeological resources could occur in areas zoned Park Operations and Administration (3C) as the result of future actions that could be implemented under the this zoning (e.g., new employee housing, road repair). However, adverse effects would be reduced in intensity under Alternative 4 because these actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement. The implementation of management zone limits and a VERP program could have long-term, moderate to major, beneficial impacts to archeological resources and local, long-term, negligible, adverse impacts depending on the management action taken.

Impacts in Wawona. Archeological resources for Wawona include historic and prehistoric sites and districts that relate to homesteading, long-term and seasonal occupation, early tourism, the U.S. Cavalry, historic roads and trails, and early park administration.

Implementation of management zone limits for Wawona would require management to enforce limits on the number of people in each zone. Actions taken to reduce visitor numbers in various zones could include removing parking areas or trails, temporarily or permanently closing certain areas, or requiring permits or reservations for access to certain areas. Enforced management zone limits would likely result in a local, long-term, moderate, beneficial effect on archeological resources compared to the No Action Alternative.

Implementation of the VERP program under Alternative 4 would be the same as described under Alternative 2. Education efforts would likely result in local, long-term, negligible to minor, benefits to archeological resources as discussed above. More restrictive measures would result in short-term or long-term, moderate, beneficial impacts to archeological resources. However, the effect of new development on archeological resources within the Wawona segments would vary depending on the nature of the development and its proximity to archeological sites. All development would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement.

Summary of Alternative 4 Impacts. Compliance with existing park policies including the 1999 Programmatic Agreement and federal laws such as the National Historic Preservation Act would help ensure that the cultural ORVs in each river segment are being protected and enhanced.

Under Alternative 4, overall visitor numbers in the future would likely be lower than under Alternative 1. Management zone limits and VERP management actions taken to protect ORVs and other resources would result in less congestion and crowding, which is likely to provide benefits to archeological resources within the corridor due to fewer visitor-related impacts such as trampling, erosion, surface collection, and vandalism. If restrictive management actions are required to achieve these conditions, there would be moderate benefits to archeological resources related to an improved natural environment. Management zones in El Portal that allow for lower levels of development than the No Action Alternative would have a long-term, moderate to major, beneficial, effect on archeological resources. These management actions would reduce the likelihood of visitor-related damage to cultural resources compared to Alternative 1, resulting in long-term, beneficial effects on archeological resources.

Cumulative Impacts

A detailed discussion of impacts from past, present, and future projects is provided under Alternative 1.

Overall these cumulative actions in combination with Alternative 4 could have a net long-term, moderate, adverse impact on archeological resources within the Merced River corridor.

Impairment

Impacts associated with Alternative 4 are not expected to impair the park's archeological resources for future generations.

National Historic Preservation Act Section 106 Summary

Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in no adverse effect to historic properties listed in or eligible for listing in the National Register of Historic Places, because the plan does not prescribe specific action. Future actions that are allowed under the proposed alternative would undergo environmental review to determine potential effects on historic properties.

Traditional Cultural Resources

Analysis

The following discussion provides an overview of the types of impacts to traditional cultural resources that could occur within each segment of the Merced River corridor under Alternative 4 from implementation of management zone limits and a VERP program. Effects on cultural resources due to the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Management actions associated with the redirection of visitors from areas with known traditional cultural resources and directing them to other areas outside of the Merced River corridor could have an adverse effect on resources outside the corridor. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to sensitive resources in other areas of the park as a result of redirection is expected to be negligible to minor, and adverse.

Impacts in Wilderness. Traditional cultural resources include continuing uses such as the travel/trade routes connecting the east and west slopes of the Sierra Nevada range.

User capacity within wilderness areas of Yosemite National Park is addressed through a trailhead quota system and monitoring of wilderness resource conditions. The management zone limits for the Wilderness segments would be set at the existing trailhead quota system numbers. Implementation of the VERP monitoring and management program for the wilderness areas would result in additional monitoring of indicators within wilderness areas, as described under Alternative 2.

Since the management zone limits would be set at existing trailhead quota system levels, no additional management actions would need to be taken to implement the limits in the wilderness areas. Implementation of the management zone limits in wilderness would have no effect on traditional cultural resources within Wilderness segments compared to the No Action Alternative.

Implementation of VERP under Alternative 4 would have the same effects as described under Alternative 2. Education efforts are expected to result in local, short and long-term, negligible, beneficial impacts on traditional cultural resources. More restrictive measures are expected to have local, long-term, negligible, beneficial effects on traditional cultural resources due a potential decrease in degradation of archeological deposits.

Implementation of restrictive measures that reduce wilderness use beyond the existing trailhead quotas in response to VERP monitoring would likely have a local, long-term, negligible, adverse impact on traditional cultural resources due to a potential reduction in American Indian access to these resources.

Impacts in Yosemite Valley. Traditional cultural resources in Yosemite Valley encompass many natural and cultural features throughout the Valley that are traditionally valued by local American Indian groups. These resources include, but are not limited to, gathering areas, religious sites, village sites, and cemeteries.

Management zone limits for the Yosemite Valley segment would require the park to manage visitor levels within the Valley to ensure that the limits for each management zone are not exceeded. If the limits are exceeded, management would take actions to reduce visitor numbers in that zone. Management actions could include visitor education regarding different areas to visit, closure of certain areas, removal of trails and or parking that facilitates access to certain areas, removal of other visitor facilities that might encourage use (such as picnic tables and/or restrooms), and requiring permits or reservations for accessing certain areas within the Valley.

These management actions would result in a local, long-term, moderate, beneficial effect on traditional cultural resources within Yosemite Valley, because these measures are likely to lower visitor levels in the long term, and would therefore decrease visitor-related damage (such as vandalism, erosion, and trampling) compared to the No Action Alternative. American Indian access to these resources would continue to be guided by the park's agreements with the tribes, such as the Agreement between the National Park Service, Yosemite National Park, and American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities (NPS 1997a). Therefore these measures could result in a local, short-term or long-term, moderate to major, beneficial impact on traditional cultural resources through resource protection.

The effects of VERP under Alternative 4 would be the same as described under Alternative 2. Educational measures would likely result in local, short and long term, negligible to minor, beneficial effects on traditional cultural resources. More restrictive measures would benefit the traditional cultural resources by reducing opportunities for resource degradation such as trampling and erosion. American Indian access to these resources would continue to be guided by the park's agreements with the local American Indian groups. Therefore these measures could result in short-term or long-term, moderate to major, beneficial impacts to traditional cultural resources through resource protection.

Overall, implementation of the proposed user capacity program with management zone limits and VERP monitoring is expected to have a moderate benefit to traditional cultural resources. Where these goals are achieved through education, the effect on traditional cultural resources is expected to be long-term, negligible, and beneficial. Management actions that result in long-term, broad based restrictions could have long-term, moderate to major, beneficial impacts or minor adverse impacts to traditional cultural resources.

Impacts in the Gorge. Traditional cultural resources in the Gorge segment include gathering areas and villages.

Management zone limits for the Gorge segment would be set based on management zoning and available parking. The National Park Service would manage the number of visitors in the Gorge to ensure that the management zone limits are not exceeded. If the limits are exceeded, management would take actions to reduce visitor numbers. Since access to the Gorge is limited by the available parking, management could reduce parking in the Gorge to reduce use levels. Management actions could also include instituting a day-use reservation program for entry into the park, or instituting entrance station closures when the limit is reached. These measures would control the overall number of people able to access the Gorge segment.

The results of these management actions would depend on the action taken. Since existing use levels of the Gorge are relatively low, management actions that reduce available access to the Gorge, such as removal of parking areas, would likely result in local, long-term, negligible beneficial effects on traditional cultural resources due to a return to the natural environment and a reduced likelihood of visitor-related damage.

Implementation of the management zone limits would be expected to result in negligible effects in the short term because existing use in these areas is relatively low. In the long term, the level of use under this alternative would be lower than under the No Action Alternative. Since current use levels are low and there are few crowding problems, this reduction of use would provide local, long-term, negligible benefits to traditional cultural resources in the Gorge segment compared to the No Action Alternative.

The effects of VERP under Alternative 4 would be the same as described under Alternative 2. Educational measures would likely result in local, short and long term, negligible to minor, beneficial effects. More restrictive measures would benefit traditional cultural resources by reducing opportunities for resource degradation such as trampling and erosion. American Indian access to these resources will continue to be guided by the park's agreements with the local American Indian groups. Therefore, these measures could result in local, short-term or long-term, moderate, beneficial impacts to traditional cultural resources through resource protection.

Overall, Alternative 4 is expected to have a moderate benefit to traditional cultural resources. Where educational measures are implemented, the effect on traditional cultural resources is expected to be long term, negligible, and beneficial. Management actions that result in long-term, broad-based restrictions could have long-term, moderate to major, beneficial impacts or minor adverse impacts to traditional cultural resources.

Impacts in El Portal. Traditional cultural resources in El Portal consist of, but are not limited to, gathering areas, cemeteries, geological features of traditional spiritual importance, and prehistoric and historic village sites. Like Yosemite Valley, contemporary associated tribes consider all of El Portal to be a traditional use area.

The boundary for the El Portal segment of the river under Alternative 4 would be based on the locations of specific ORVs, with primarily low-density zoning, except in limited existing developed areas. Under this alternative, there would be Open Space (2A) and Discovery (2B) zoning south of the river except in the Trailer Village/Abbieville area, which would be zoned Park Operations and Administration (3C). North of the river would be zoned 2B except for the pockets of existing development such as Railroad Flat, Rancheria, Middle Road and Old El Portal, which would be zoned 3C.

In the areas zoned Park Operations and Administration (3C), additional development of facilities or removal of facilities could occur. If this development or removal occurred, then traditional cultural resources, which are identified as a component of the cultural ORV, could be disturbed. This is considered a local, long-term, minor to major, adverse impact. The intensity of impact would depend on the nature, location, and design of the facility to be developed or removed as well as the quantity of the traditional cultural resource(s) affected. These actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and in consultation with associated American Indians groups. If the construction of proposed new facilities temporarily leads employees or visitors closer to traditional cultural resources, the effect would be local, short term, minor, and adverse. If the facilities increase visitor or employee exposure to traditional cultural resources, the effect could be local, long-term, minor, and adverse. Conversely, if the proposed new facilities avoid traditional cultural resources and reduce visitor- or employee-related damage to these resources, the 3C management zoning could have a local, long-term, negligible to minor, beneficial impact. When compared to the other alternatives, Alternative 4 would have less adverse impacts to traditional cultural resources because fewer acres would be zoned (3C). In this alternative, there would be less additional development or redevelopment within most areas of the El Portal segment, resulting in less potential for impacts to traditional cultural resources.

New development would also be subject to the consistent set of criteria and considerations adopted in the Merced River Plan, as well as current park management policies. These management policies guide how actions could be implemented to minimize adverse effects to cultural resources. Because the Alternative 4 corridor boundary is smaller than in Alternatives 2 and 3, this alternative may be excluding currently unidentified traditional cultural resources that may be located outside of the boundary. All ORVs must be protected on a segmentwide basis regardless of the zoning designation or whether the resources are in or outside of the river corridor boundary. Therefore, the adverse effect of new development on traditional cultural resources within the El Portal segment would likely be, long term, and negligible.

In general, Alternative 4 would have a local, long-term, moderate to major, beneficial effect on traditional cultural resources compared to Alternative 1, which would have a smaller river corridor and less protective management zoning.

Implementation of management zone limits for the El Portal segment are expected to have negligible effects on traditional cultural resources in the short term due to low levels of visitor use. In the long term, enforcement of management zone limits for this segment could limit future development, require removal of existing informal parking areas, or require additional restrictions on visitor activities such as rafting, kayaking, or fishing. Implementation of these types of measures would likely have local, long-term, minor to moderate, beneficial effects on traditional cultural resources.

Implementation of a VERP program under Alternative 4 would have the same effects described under Alternative 2. Educational measures would likely result in local, short- and long-term, negligible to minor, beneficial effects. More restrictive measures would benefit traditional cultural resources by reducing opportunities for resource degradation such as trampling and erosion. American Indian access to these resources would continue to be guided by the park's agreements with the tribes. Therefore, these measures could result in local, short-term or long-term, moderate to major, beneficial impacts to traditional cultural resources through resource protection.

Overall, local, short- and long-term, negligible to minor, adverse impacts to traditional cultural resources and local, short- and long-term, minor to moderate, beneficial impacts on traditional cultural resources could occur as a result of future actions that could be implemented under the proposed management zoning. However, adverse effects would be reduced in intensity under Alternative 4 by the application of zoning within the larger river corridor boundary (as compared to Alternative 1). The implementation of management zone limits and a VERP program could have long-term, moderate, beneficial impacts or long-term, minor, adverse impacts to traditional cultural resources, depending on the management action taken.

Impacts in Wawona. Traditional cultural resources in Wawona include gathering areas, cemeteries, and village sites.

Implementation of management zone limits for the Wawona segments would require park management to enforce limits on the number of people in each zone. Actions to reduce visitor numbers in various zones could include removing parking or trails, temporarily or permanently closing certain areas, or requiring permits or reservations for access to certain areas. American Indian access to these resources would continue to be guided by the park's agreements with the tribes. Therefore, enforcing management zone limits would result in a local, long-term, moderate, beneficial effect on traditional cultural resources compared to the No Action Alternative.

Implementation of the VERP program under Alternative 4 would be the same as described under Alternative 2. Educational efforts would likely result in local, long-term, negligible to minor benefits to traditional cultural resources. More restrictive measures would benefit traditional cultural resources by reducing opportunities for resource degradation. American Indian access to these resources would continue to be guided by the park's agreements with local American Indian groups. Therefore, these measures could result in local, short-term or long-term, moderate to major, beneficial impacts to traditional cultural resources through resource protection.

Summary of Alternative 4 Impacts. Compliance with existing park policies including the 1999 Programmatic Agreement; the 1997 Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities; and federal laws such as the National Historic Preservation Act, American Indian Religious Freedom Act, and Native American Graves Protection and Repatriation Act would help ensure that the cultural ORVs in each river segment are being protected and enhanced.

Implementation of management zone limits and various VERP management actions are expected to result in improvements of natural and cultural conditions within the river corridor. Under Alternative 4, overall visitor numbers in the future would likely be lower than under Alternative 1. Management zone limits and VERP management actions to protect ORVs and other resources would likely result in less congestion and crowding. The improvements to the natural setting and reduced crowding and congestion are expected to provide benefits to traditional cultural resources within the river corridor. If restrictive management actions are required to achieve these natural and social conditions, there would be moderate benefits to traditional cultural resources related to an improved natural environment. Management zones in El Portal that allow for lower levels of development than the No Action Alternative would have a long-term, moderate to major, beneficial, effect on traditional cultural resources.

Cumulative Impacts

A detailed discussion of impacts from past, present, and future projects is provided under Alternative 1. Overall these cumulative actions in combination with Alternative 4 could have a net long-term, minor, beneficial impact on traditional cultural resources within the Merced River corridor. They could also result in a long-term, minor, adverse impact due to increased development and visitor-related damage.

Impairment

Because impacts to traditional cultural resources are primarily beneficial, Alternative 4 is not expected to impair the park's traditional cultural resources for future generations.

National Historic Preservation Act Section 106 Summary

Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in no adverse effect to historic properties listed in or eligible for listing in the National Register of Historic Places, because the plan does not prescribe specific action. Future actions that are allowed under the proposed alternative would undergo environmental review to determine potential effects on historic properties.

Historic Sites, Structures, and Landscapes

Analysis

The following discussion provides an overview of the types of impacts to historical sites, structures, and landscapes that could occur within each segment of the Merced River corridor under Alternative 4 from implementation of management zone limits and a VERP program. Effects on these resources resulting from the proposed corridor boundary and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Historic sites, structures, and landscapes in the Yosemite Wilderness include the Merced Lake High Sierra Camp, John Muir Trail, remains of the original Yosemite Grant boundary fence, U.S. Cavalry trails, and sites associated with early stock grazing.

User capacity within wilderness areas of Yosemite National Park is addressed through a trailhead quota system and monitoring of wilderness resource conditions. The management zone limits for the Wilderness segments would be set at the existing trailhead quota system numbers. Implementation of the VERP program for the Wilderness segments would result in additional monitoring of indicators within wilderness areas, as described under Alternative 2.

Since the management zone limits would be set at existing trailhead quota system levels, no additional management actions would be needed to implement the limits in the Wilderness segments. Implementation of the management zone limits in wilderness would have no effect on historic sites, structures, and landscapes within Wilderness segments compared to Alternative 1.

Under Alternative 4, the effects of the VERP program in the wilderness would be the same as described under Alternative 2. Educational efforts are expected to result in local, short- and long-term, minor, beneficial impacts to historic resources. If VERP monitoring indicates that more restrictive measures that reduce wilderness use are needed (such as reducing trailhead quotas, restricting stock use, and limiting day-use access in heavily used areas to users with permits or guided groups), there would be local, long-term, negligible to minor, beneficial effects on historic sites, structures, and landscapes due to a potential decrease in visitor-related damage, such as trampling, vandalism, and wear and tear.

Implementation of restrictive measures that reduce wilderness use beyond the existing trailhead quota system in response to VERP monitoring is expected to have a local, long-term, negligible to minor, beneficial impact on historic sites, structures, and landscapes due to a potential reduction in visitor-related damage to these resources.

Impacts in Yosemite Valley. Historic sites, structures, and landscapes in Yosemite Valley include the Yosemite Valley Historic District, which consists of historic bridges, a campground, orchards, trails, roads, residences, administrative facilities, and visitor accommodations. This district includes the Yosemite Village Historic District and the Curry Village Historic District. The Valley also contains several National Register-eligible or -nominated historic buildings and three National Historic Landmarks: the LeConte Memorial Lodge, the Ranger's Club, and The Ahwahnee.

Management zone limits for the Yosemite Valley segment would require the park to manage visitor use within the Valley to ensure that the limits for each management zone are not exceeded. If visitor numbers exceed the limits, management would take actions to reduce visitor numbers in that zone. Management actions could include visitor education regarding different areas to visit, closure of certain areas, removal of trails and or parking that facilitate access to certain areas, removal of other visitor facilities that might encourage use (such as picnic tables and/or restrooms), and requiring permits or reservations for accessing certain areas within the Valley.

These management actions would result in a local, long-term, moderate, beneficial effect on historical sites, structures, and landscapes because these measures would likely result in lower visitor levels in the long term, and would therefore decrease visitor-related damage (such as vandalism, erosion, and trampling) compared to the No Action Alternative.

In addition to managing visitor numbers within the Valley, park management would implement VERP. The effects of VERP under Alternative 4 would be the same as described under Alternative 2. Educational measures are expected to result in local, short and long term, negligible to minor, beneficial effects on historic sites, structures, and landscapes. More restrictive measures would result in short-term or long-term, moderate, beneficial impacts to historic sites, structures, and landscapes. Site hardening could result in adverse effects on historic landscapes if the new design is incompatible with the character of the landscape. However, these actions would be subject to site-specific planning and compliance and undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement and the Yosemite Valley design guidelines (NPS 2004c). If the design is compatible with the historic character of the landscape, and if the new facilities reduce the likelihood of visitor-related damage to historic sites, structures, and landscapes, then site hardening activities could have a local, long-term, moderate, beneficial effect on these resources.

Overall, implementation of management zone limits and a VERP program is expected to have a minor to moderate benefit to historic sites, structures, and landscapes by reducing the likelihood of visitor-related damage to these resources. Where educational measures are implemented, the effect is expected to be long term, negligible, and beneficial. Management actions that result in long-term, broad-based restrictions could have long-term, moderate, beneficial impacts to these resources. Other actions, such as site hardening, could have long-term, minor to moderate, adverse effects or long-term, moderate, beneficial effects on historic sites, structures, and landscapes.

Impacts in the Gorge. Historic sites, structures, and landscapes in the Gorge segment include the Merced Canyon Travel Corridor, and the remaining structures associated with the Yosemite Valley Hydroelectric Power Plant.

Management zone limits for the Gorge segment would be based on the management zoning and available parking. The National Park Service would manage the number of visitors in the Gorge to ensure that the management zone limits are not exceeded. If the limits are exceeded, park management would take actions to reduce visitor numbers. Since access to the Gorge is limited by the available parking, management could reduce parking to reduce use levels. Management actions could also include instituting a day-use reservation program for entry into the park, or instituting entrance station closures when the limit is reached. These measures would control the overall number of people able to access the Gorge segment.

Implementation of the management zone limits would be expected to result in negligible effects in the short term because existing use in the Gorge segment is relatively low. In the long term, the level of use under Alternative 4 would likely be lower than under the No Action Alternative. Since current use levels are low and there are few crowding problems, this reduction of use would provide local, long-term, negligible, benefits to historic sites, structures, and landscapes in the Gorge.

The effects of VERP under Alternative 4 would be the same as described under Alternative 2. Educational measures are expected to result in local, short and long term, negligible to minor beneficial effects. More restrictive measures would result in short-term or long-term, moderate to major, beneficial impacts to historic sites, structures, and landscapes. Site-hardening activities could result in adverse effects on historic landscapes if the new design is incompatible with the character of the landscape. However, these actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations and mitigation measures in the park's 1999 Programmatic Agreement and the Yosemite Valley design guidelines. If the design is compatible with the historic character of the landscape and the new facilities reduce the likelihood of visitor-related damage to historic sites, structures, and landscapes, then site-hardening activities could have a local, long-term, minor, beneficial effect on these resources.

Overall, Alternative 4 is expected to have a negligible to minor benefit to historic sites, structures, and landscapes by reducing the likelihood of visitor-related damage to these resources. Where these goals are achieved through education, the effect would be long term, negligible and beneficial. Management actions that result in long-term, broad based restrictions could have long-term, moderate to major, beneficial impacts to these resources. Other actions, such as site hardening, could have long-term, minor to moderate, adverse effects or long-term, moderate, beneficial effects on historic sites, structures, and landscapes.

Impacts in El Portal. Historic sites, structures, and landscapes in El Portal consist of the Old El Portal cultural landscape, the Murchison (National Lead Company) structures, railroad houses, the chapel, the old store, the El Portal Market, the old hotel (Yosemite Institute administrative offices), Bagby Station, and other sites and structures related to early industry, homesteading, and tourism in the Merced corridor. Some of these structures are privately owned or used only as National Park Service or park partner's administrative facilities. Because these structures are not open to the public, they are unlikely to experience adverse effects from visitor use.

The boundary for the El Portal segment of the river in this alternative was based upon the locations of specific ORVs with primarily low-density zoning, except in limited currently developed areas. Under Alternative 4, there would likely be less additional development or redevelopment within most areas of the El Portal segment, thus resulting in less potential for impacts to historic sites, structures, and landscapes. h has a smaller river corridor.

The proposed boundary and zoning designations for the El Portal segment under Alternative 4 would allow redevelopment within the areas zoned Park Operations and Administration (3C), but the Open Space (2A) and Discovery (2B) zoning that dominates the segment would substantially limit development potential in El Portal. This development north of the river could result in an adverse effect. However, the potential actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and 2004 design guidelines. Therefore, the adverse effects of new development would likely be local, long term, and negligible to minor. Conversely, if the design is compatible with the historic landscape character and the new facilities reduce the likelihood of visitor- or employee-related damage to historic sites, structures, and landscapes, then site-hardening activities could have a local, long-term, moderate, beneficial effect on these resources.

The Open Space (2A) and Discovery (2B) zoned areas south of the river is characterized by quiet and natural areas. Only limited development would be appropriate in these zones. Because this intended use is similar to the current use of the area, no impacts are likely to occur compared to the No Action Alternative.

Overall, the river corridor boundary and management zoning for Alternative 4 would have a local, long-term, moderate, beneficial effect to these resources compared to the No Action alternative.

Implementation of management zone limits for the El Portal segment are expected to have negligible effects on historic sites, structures, and landscapes in the short term due to low levels of visitor use. In the long term, enforcement of management zone limits for this segment could limit future development, require removal of existing informal parking areas, or require additional restrictions on visitor activities such as rafting, kayaking, or fishing. Implementation of these types of measures would be expected to have local, long-term, minor, beneficial effects on these resources.

Implementation of VERP within this segment would be the same as described under Alternative 2. Educational measures would be expected to result in local, short- and long-term, negligible to minor, beneficial effects. More restrictive measures could result in short- or long-term, moderate to major, beneficial impacts to historic sites, structures, and landscapes. Site hardening could result in adverse effects on historic landscapes if the new design is incompatible with the character of the landscape. However, the potential actions would be subject to site-specific planning and compliance and would be undertaken in accordance with the stipulations in the park's 1999 Programmatic Agreement and 2004 design guidelines. Therefore, the adverse effects of new development would likely be local, long term, and negligible to minor. If the design is compatible with historic landscape character and the new facilities reduce the likelihood of visitor-related damage to historic sites, structures, and landscapes, then site-hardening activities could have a local, long-term, moderate, beneficial effect on these resources.

Overall, local, long-term, minor, adverse impacts and local, short- and long-term, moderate, beneficial impacts on historic sites, structures, and landscapes could occur as the result of future actions that could be implemented under the proposed zoning. Adverse effects would be reduced in intensity under Alternative 4 by the application of zoning within the larger river corridor boundary (as compared to Alternative 1). The implementation of management zone limits and a VERP program could have long-term, moderate, beneficial impact to historic sites, structures, and landscapes and local, long-term, negligible to minor, adverse impacts depending on the management action taken.

Impacts in Wawona. Historic sites, structures, and landscapes in Wawona include the Washburn cultural landscape, the Chowchilla Mountain Road, Civilian Conservation Corps structures, the Wawona Covered Bridge, the Wawona Hotel (a National Historic Landmark), and the Pioneer Yosemite History Center. Many relocated, individually listed National Register historic structures comprise the Pioneer Yosemite History Center.

Implementation of management zone limits for Wawona segments would require management to enforce limits on the number of people in each zone. Actions taken to reduce visitor numbers in various zones could include removal of parking and trails, temporary or permanent closure of certain areas, or a requirement for permits or reservations for access to certain areas. Enforcement of the management zone limits would likely result in a local, long-term, moderate, beneficial effect on historic sites, structures, and landscapes compared to the No Action Alternative.

Implementation of the VERP program under Alternative 4 would have the same effects described under Alternative 2. Educational measures are expected to result in local, short and long term, negligible to minor beneficial effects on historic sites, structures, and landscapes. More restrictive measures would result in short-term or long-term, minor to moderate, beneficial impacts to historic sites, structures, and landscapes. Site-hardening activities could result in adverse effects on historic landscapes, but any new design would be compatible with the historic landscape character. If the new facilities reduce the likelihood of visitor-related damage to historic sites, structures, and landscapes, then site-hardening activities could have a local, long-term, minor to moderate, beneficial effect on these resources.

Summary of Alternative 4 Impacts. Compliance with existing park policies including the 1999 Programmatic Agreement, Yosemite National Park design guidelines, and federal laws such as the National Historic Preservation Act would help ensure that the cultural ORVs in each river segment are being protected and enhanced.

Under Alternative 4, overall visitor numbers in the future would likely be lower than under Alternative 1. Management zone limits and management actions taken to protect ORVs and other resources would result in less congestion and crowding. VERP would provide a suite of data to help monitor and preserve historic sites, structures, and landscapes. The improvements to the natural and cultural setting and reduced crowding and congestion would likely provide benefits to historic sites, structures, and landscapes within the corridor due to a decrease in visitor-related impacts such as vandalism, erosion, and wear and tear. If restrictive management actions are required to achieve these natural and social conditions, there would be moderate benefits to these resources, due to a reduction in visitor-related damage. Management zones in El Portal that allow for lower levels of development than the No Action Alternative would have a long-term, moderate, beneficial, effect on historic sites, structures, and landscapes.

Cumulative Impacts

A detailed discussion of impacts from past, present, and future projects is provided under Alternative 1. Overall, these cumulative actions in combination with Alternative 4 could have a net long-term, moderate, adverse impact on historic sites, structures, and landscapes within the Merced River corridor.

Impairment

Because adverse impacts to historic sites, structures and landscapes are expected to be negligible, Alternative 4 would not impair the park's historic sites, structures, and landscapes for future generations.

National Historic Preservation Act Section 106 Summary

Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) that address the criteria of effect and adverse effect, the user capacity program and the El Portal boundary and zoning designations proposed under this alternative would allow (but do not prescribe) actions that have the potential to adversely affect significant properties. The National Park Service has determined that selection of this alternative would result in no adverse effect to historic properties listed in or eligible for listing in the National Register of Historic Places, because the plan does not prescribe specific action. Future actions that are allowed under the proposed alternative would undergo environmental review to determine potential effects on historic properties.

Visitor Experience

Analysis

The following discussion provides an overview of the types of impacts to recreation, interpretation and orientation, visitor services, and wilderness experience that could occur within each segment of the Merced River corridor under Alternative 4. The analysis for the El Portal segment also describes the types of impacts to visitor experience that could occur based on the adoption of a river corridor boundary that closely follows the location of ORVs.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have an adverse effect on the visitor experience. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to the visitor experience associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to the visitor experience are expected to be minor to moderate, and adverse.

Recreation

Analysis

The following discussion provides an overview of the types of impacts to recreational resources that could occur within each segment of the Merced River corridor under Alternative 4. Effects on recreation from the proposed corridor boundaries and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Recreation ORVs in the Wilderness segment include outstanding opportunities for solitude along the river, primitive and unconfined recreation, and recreational opportunities such as day hiking, backpacking, horseback riding and packing, camping, and the enjoyment of natural river sounds.

User capacity within wilderness areas of Yosemite National Park is currently addressed through trailhead quotas and monitoring of wilderness resource conditions. The management zone limits for the Wilderness segments would be set at the existing trailhead quota numbers and would not affect access to wilderness areas. Since access to wilderness areas is already limited, the annual visitor limit would not affect it.

Implementation of the VERP program under Alternative 4 would be the same as described under Alternative 2.

Implementation of Alternative 4 in wilderness areas would be expected to have a local, long-term, minor to moderate, beneficial impact on the recreational experience in terms of opportunities for solitude, and a local, long-term, moderate to major, adverse effect on some visitors' access to wilderness areas through trailhead quota reductions or restrictions on day visitors in wilderness areas. These restrictions would be designed to maintain the spectrum of recreational opportunities, although levels of use may be reduced. Although the potential for decreased access would adversely affect some visitors, overall the protection of the wilderness resources and the solitude of the wilderness experience would be expected to result in protection of the recreation ORVs.

Impacts in Yosemite Valley. Management zone limits for the Yosemite Valley segment were set based on the management zoning for the area, available facilities, and existing levels of use. Park management would manage visitor use within the Valley to ensure that the limits for each management zone are not exceeded. Management of use levels in various zones could require reservations for use of certain areas or controls on access (fencing, entrance stations) to more popular areas. This would result in a much more rigid and controlled visitor experience and could result in limiting visitor numbers in each of the various zones within the river corridor, which would result in a local, long-term, major, adverse effect on visitor experience. The annual maximum visitor limit for the corridor could also reduce future visitor use in the Valley compared to the No Action Alternative, resulting in potential benefits to visitor experience from reduced crowding, and potential adverse effects related to reduced access.

In addition to managing visitor numbers within each management zone, park management would implement the VERP program as described for Alternative 2.

Overall, implementation of the existing user capacity program, supplemented with management zone limits and VERP is expected to benefit the visitor experience by reducing traffic congestion and crowding, and conserving the natural and cultural environment, resulting in a minor to major beneficial effect (depending upon the management actions). The change in the level of management control over visitors and restrictions of visitor access to various management zones would result in local, long-term, major, adverse effects on visitor experience. Therefore, implementation of Alternative 4 would be expected to result in more adverse effects on recreation and visitor experience, as compared to Alternative 1.

Impacts in the Gorge. Management zone limits for the Gorge segment are based on the management zoning for these areas as well as available parking. Park management would manage the number of visitors in each management zone to ensure that the limits are not exceeded. Management of use levels in various zones could require reservations for use of certain areas or controls on access to more popular areas. This would result in a much more rigid and controlled recreation experience for visitors to the gorge, resulting in a local, long-term, major, adverse effect on recreation and the visitor experience. The annual maximum visitor limit for the corridor could also reduce future visitor use in the gorge compared to Alternative 1, resulting in potential benefits to visitor experience from reduced crowding, and potential adverse effects related to reduced access.

In addition to managing visitor numbers within each management zone, the park would implement the VERP program as described for Alternative 2.

Overall, implementation of management zone limits with the VERP program within the Gorge segment would be expected to result in local, long-term, negligible to minor, beneficial impacts on visitor experience related to reduced crowding and reduced impacts to the natural environment. Management actions addressing VERP standards and enforcing management zone limits would result in local, long-term, major, adverse impacts on recreation due to the increased management control over visitor activities and movement between management zones.

Impacts in El Portal. The boundary for the El Portal segment of the river in Alternative 4 was closely based upon the location of identified ORVs in El Portal. The zoning under Alternative 4 results in few areas being zoned for additional administrative development (3C) and proposes one of the lowest density zoning classifications, Open Space (2A), for much of the area south of the Merced River and east of the levee. The zoning classification for other nondeveloped areas would be Discovery (2B), which allows only very limited facility development. The existing commercial raft launch site west of Foresta Bridge would be inconsistent with the proposed Discovery zoning, and could be removed in the future. Overall, Alternative 4 would likely result in less future development in El Portal and could result in the removal of the commercial raft launch facility. Whitewater rafting is one of the recreation activities specifically addressed in the recreation ORVs for this segment. The effect on recreation access and the recreation ORVs would likely be local, long-term, moderate to major, and adverse due to the loss of the raft launch facility.

Implementation of management zone limits for the El Portal segment would be expected to have negligible effects on recreational access and use in the short term due to low levels of visitor use. In the long term, enforcement of management zone limits for this segment could result in restrictions on visitor use and access, as well as having an adverse effect on the quality of the visitor experience related to the increased level of control over visitor use of the area. These changes would be expected to have a local, long-term, minor to major, adverse effect. The annual maximum visitor limit for the corridor could also reduce future visitor use in El Portal compared to the No Action Alternative, resulting in potential benefits to visitor experience from reduced crowding, and potential adverse effects related to reduced access.

Implementation of the VERP component of Alternative 4 would have the same effects as described for Alternative 2.

Implementation of Alternative 4 would be expected to have local, long-term, moderate to major, adverse effects on recreational access and the recreation ORVs, due to the loss of the commercial raft launch, and increases in restrictions and management controls.

Impacts in Wawona. Implementation of management zone limits for Wawona would require management to enforce limits on the number of visitors in each zone. Management of capacities in each management zone would require monitoring and limiting visitor use of each area, resulting in a much more rigid and controlled visitor experience within the corridor, which would be a local, long-term, moderate to major, adverse effect. Implementation of the VERP component of Alternative 4 would have the same effects as described for Alternative 2.

Overall, implementation of the proposed user capacity program with management zone limits and VERP is expected to benefit the visitor experience by reducing traffic congestion and crowding, and conserving the natural and cultural environment. The change in the level of management control over visitors and restrictions of visitor access to various management zones would result in local, long-term, moderate to major, adverse effects on visitor experience. The annual maximum visitor limit for the corridor could also reduce future visitor use in Wawona compared to the No Action Alternative, resulting in potential benefits to visitor experience from reduced crowding, and potential adverse effects related to reduced access.

Therefore, implementation of Alternative 4 would be expected to result in more adverse effects on recreation and visitor experience compared Alternative 1.

Summary of Alternative 4 Impacts. Implementation of management zone limits and an annual corridorwide visitor limit, along with the VERP program, would be expected to result in additional restrictions on visitor access to various management zones and lower overall visitor levels in the long term. These restrictions would be designed to maintain the spectrum of recreational opportunities, but could limit the use level of some activities. Management of visitor use by management zone would also result in a much more rigid and controlled visitor experience within the river corridor, and the proposed zoning in El Portal would be inconsistent with the existing raft launch. Therefore, Alternative 4 would have a local, long-term, major, adverse effect on visitor experience compared to Alternative 1.

Cumulative Impacts

The effects of past, present, and reasonably foreseeable future projects are summarized under Alternative 1. These cumulative projects would be expected to result in local, long-term, negligible to minor benefits because the beneficial impacts associated with increased visitor access and expanded recreational opportunities would be partially offset by the adverse impacts associated with the removal of specific recreational opportunities.

Alternative 4 together with the cumulative projects would be expected to have both long-term beneficial and adverse effects on recreation, visitor experience, and the recreation ORVs.

Implementation of management zone limits and VERP would have beneficial effects on visitor experience through reduced crowding and traffic congestion and improvements in the natural setting. Implementation of the management zone limits would also result in additional restrictions on visitor use and access to various management zones, resulting in a much more rigid and controlled visitor experience. Overall, the cumulative effect would be expected to be local, long-term, major, and adverse.

Interpretation and Orientation

Analysis

The following discussion provides an overview of the types of impacts to interpretation and orientation that could occur within each segment of the Merced River corridor under Alternative 4. Effects on recreation from the proposed corridor boundaries and zoning in El Portal are also addressed for the El Portal segment.

Impacts in Wilderness. Management zone limits for wilderness areas would be set at existing trailhead quotas and would not affect existing interpretive programs in wilderness areas. Since access to wilderness areas is already limited, the annual visitor limit would not affect it.

Implementation of the proposed user capacity program with VERP in wilderness areas would be the same as described in Alternative 2. This could result in a local, short- or long-term, negligible to minor, adverse effect on visitor experience from reduced access to interpretative programs in wilderness areas compared to the opportunities under the No Action Alternative. There would be a local, short- and long-term, negligible to minor, adverse effect from reduced access to interpretive programs compared to Alternative 1.

Impacts in Yosemite Valley. Implementation of management zone limits in Yosemite Valley and the annual maximum visitor limit for the corridor could reduce visitor access to some interpretive programs within more popular areas. Most interpretive programs currently offered by park rangers and park partners would likely continue in Yosemite Valley, although the locations of programs and the size of groups served could change. The impact of these changes would be expected to be local, long-term, minor, and adverse.

Implementation of the VERP program in Yosemite Valley would be the same as described for Alternative 2. Overall, changes in interpretative programs and orientation could result in local, long-term, minor, adverse impacts on visitor experience if restrictions are implemented that would limit the frequency and size of ranger-led walks and access to other interpretive programs compared to Alternative 1.

Impacts in the Gorge. No interpretive programs are currently offered in the gorge. Implementation of management zone limits, the annual visitor limit for the corridor, and the VERP program would not be expected to change this. Alternative 4 would not impact interpretation and orientation compared to Alternative 1.

Impacts in El Portal. Limited interpretive programs are currently offered in El Portal. The proposed corridor boundary and zoning configuration would not be expected to result in additional interpretive programs on National Park Service lands in EL Portal, but would also not adversely affect the existing interpretive program on private lands. Therefore, there is not expected to be an impact on interpretation and orientation compared to Alternative 1. Similarly, due to the low level of visitor use in El Portal, implementation of management zone limits, the maximum annual visitor limit for the corridor, and the VERP program would not be expected to result in any impacts to orientation and interpretation compared to Alternative 1.

Impacts in Wawona. Implementation of management zone limits in Wawona would not likely change the availability of or access to interpretive programs in the short run. In the long term, management zone limits and the annual visitor limit for the corridor could reduce visitor access to interpretive programs in the future, particularly if management zone limits for popular areas, such as the Pioneer Yosemite History Center, result in future potential visitors being turned away.

Implementation of the VERP program in Wawona would be the same as described for Alternative 2. Overall, the impacts to interpretive and orientation programs in Wawona under Alternative 4 would be expected to be local, long-term, minor, and adverse due to decreased opportunities to access these programs.

Summary of Alternative 4 Impacts. Alternative 4 could have local, long-term, minor, adverse impacts on visitor experience if management zone limits or management actions taken under VERP reduce access to and availability of interpretation and orientation programs and services. The impact could be local, long-term, negligible, and beneficial if management actions taken to increase education result in increased access to and availability of interpretation and orientation programs. The overall impact to these programs is expected to be negligible to minor, and adverse.

Cumulative Impacts

The effects of past, present, and reasonably foreseeable future projects are described under Alternative 1. These cumulative projects would have a long-term, minor, beneficial impact, because the beneficial impacts associated with an increase in interpretation and orientation programs and services would only be partially offset by the potential decrease in wilderness programs.

Alternative 4 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, negligible, adverse impact because the availability and diversity of interpretation and orientation programs and services would increase through some of the cumulative projects, but Alternative 4 could result in management actions that reduce access to and availability of interpretation and orientation programs and services.

Visitor Services

Analysis

The following discussion provides an overview of the types of impacts to visitor services that could occur within each segment of the Merced River corridor under Alternative 4. Effects on visitor services from the proposed corridor boundary and zoning in El Portal under Alternative 4 are also addressed for the El Portal segment.

Impacts in Wilderness. Management zone limits for wilderness areas would be set at existing trailhead quotas and would not be expected to result in any changes to visitor services in wilderness areas as compared to Alternative 1. Since access to wilderness areas is already limited, the annual visitor limit would not affect it.

Implementation of the VERP program under Alternative 4 would be the same as described under Alternative 2. Since wilderness areas currently have low levels of visitor services, Alternative 4 would likely result in local, short- or long-term, minor, adverse effects on visitor experience through reduced services and opportunities in wilderness areas.

Impacts in Yosemite Valley. Implementation of management zone limits in Yosemite Valley would require park management to control and limit visitor use in each area in accordance with the management zone limits. This would result in a much more rigid and controlled visitor experience and could result in limiting visitor numbers in various zones within the river corridor. In addition, the corridorwide annual visitor limit could reduce visitor access to visitor services compared to Alternative 1. These measures could result in a local, long-term, minor, adverse effect on access to visitor services in Yosemite Valley.

The VERP component of Alternative 4 would be the same as described for Alternative 2. Therefore, the overall impacts of Alternative 4 on provision of and access to visitor services would be expected to be local, long-term, minor, and adverse.

Impacts in the Gorge. Implementation of management zone limits within the Gorge segment and the annual maximum visitor limit for the corridor would not be expected to result in substantive changes to use levels, due to the existing low use levels. Implementation of management zone limits would result in more management controls over use of specific areas in the gorge, however, resulting in a local, long-term, negligible to minor, adverse effect on access to the limited facilities in the gorge. Implementation of VERP under Alternative 4 would result in the same effects as described for Alternative 2. Therefore, the overall impacts of Alternative 4 on provision of and access to visitor services would be expected to be local, long-term, negligible to minor, and adverse.

Impacts in El Portal. Visitor services available in El Portal are largely run by private businesses (e.g., lodging, restaurants, etc.) and are located on private lands adjacent to the El Portal Administrative Site. Implementation of the proposed corridor boundary and the restrictive zoning under Alternative 4 would not result in any change to visitor services on National Park Service lands in El Portal. Similarly, implementation of management zone limits, the maximum annual limit for the corridor, and VERP would not be expected to affect privately provided visitor services in the area.

Impacts in Wawona. Under Alternative 4, implementation of management zone limits in Wawona would require park management to control and limit visitor use in each area in accordance with the management zone limit. This would result in a much more rigid and controlled visitor experience and could result in limiting visitor numbers in various zones within the river corridor. The annual visitor limit for the corridor would also result in lower visitor access to services compared to Alternative 1. This could result in a local, long-term, minor, adverse effect on access to visitor services in Wawona.

The VERP component of Alternative 4 would be the same as described for Alternative 2. Therefore, the overall impacts of Alternative 4 on provision of and access to visitor services would be expected to be local, long-term, minor, and adverse.

Summary of Alternative 4 Impacts. Actions taken under Alternative 4 would be expected to result in a local, long-term, minor, adverse impact on access to and the availability of visitor services due to the increased controls associated with management of visitor use by management zone.

Cumulative Impacts

Effects of past, present, and reasonably foreseeable future projects are described under Alternative 1. The cumulative projects would have a long-term, minor to moderate, adverse impact on visitor services due to the overall reduction of overnight accommodations in Yosemite Valley and potential increased restrictions on facilities and activities in wilderness areas. These adverse impacts would be partially offset by improving parking and traffic circulation in Yosemite Valley, rehabilitating and expanding some campgrounds in the park, and expanding lodging opportunities outside the park.

Alternative 4 and the cumulative projects would result in a long-term, minor to moderate, adverse impact on visitor services because of the potential reduction of overnight accommodations in Yosemite Valley and the potential restrictions on facilities and activities in wilderness areas. This adverse impact would be partially offset by improving parking and traffic circulation within the Valley, rehabilitating and expanding some campgrounds in the park, and expanding lodging opportunities outside the park.

Wilderness Experience

Analysis

The following discussion provides an overview of the types of impacts to the wilderness experience that could occur within the Merced River corridor under Alternative 4.

Under Alternative 4, the park management program would adopt management zone limits and an annual maximum corridorwide visitor limit, as well as implementing the VERP program as described for Alternative 2. For wilderness areas, the management zone limits would be set to match the existing wilderness trailhead quota levels and would not affect the wilderness experience. Since access to wilderness areas is already limited, the annual visitor limit would not affect it. Therefore, implementation of Alternative 4 is expected to result in local, long-term, negligible, beneficial effects on the wilderness experience.

Summary of Alternative 4 Impacts. Adoption of the management zone limits and the annual visitor limit would not affect the wilderness experience. The wilderness experience under Alternative 4 would be expected to be beneficially affected by actions taken to address VERP standards in wilderness areas. Management actions that reduce access to these areas could result in adverse effects on visitor access to these areas. Overall, the impact is expected to be local, long-term, negligible, and beneficial.

Cumulative Impacts

Effects of past, present, and reasonably foreseeable future projects are described under Alternative 1. These cumulative projects would have a long-term, minor, beneficial impact on the wilderness experience, because the wilderness ecosystem would be improved and this benefit would be only partially offset by potential long-term, adverse impacts related to possible additional restrictions on facilities and activities in wilderness areas.

Alternative 4 and the cumulative projects would result in a local, long-term, negligible to minor, beneficial impact to the wilderness experience, because the beneficial improvements to the wilderness ecosystem would offset the potential long-term, adverse impacts related to possible additional restrictions on facilities and activities in wilderness areas and the potential restrictions associated with VERP.

Social Resources

Land Use

Analysis

The following discussion provides an overview of the types of impacts to land use that could occur within each segment of the Merced River corridor under Alternative 4. The analysis for the El Portal segment also describes the types of impacts to land use that could occur based on the river corridor boundary proposed under Alternative 4. Alternative 4 would not be expected to result in any changes in land use within the park. Development in El Portal is discussed below.

Impacts to Wilderness. Alternative 4 would result in continued management of wilderness areas under the wilderness trailhead quotas. The management zone limits and annual visitor limit would not have a substantive effect on wilderness areas. The proposed VERP program would be based on and consistent with existing management zoning and existing land uses within the Wilderness segment of the corridor.

Impacts to Yosemite Valley. Implementation of management zone limits and a maximum annual visitor limit would not affect land use in Yosemite Valley. The proposed VERP program is based on and consistent with existing management zoning and existing land uses within Yosemite Valley.

Impacts to the Gorge. Implementation of management zone limits and a maximum annual visitor limit would not affect land use in the Gorge. The proposed VERP program is based on and consistent with existing management zoning and existing land uses within the Gorge.

Impacts to El Portal. The boundary for the El Portal segment of the river in this alternative was closely based upon the location of identified ORVs in El Portal. The management zoning under Alternative 4 would result in few areas being zoned for additional administrative development. It also proposes one of the lowest density zoning classifications, Open Space (2A), for much of the area south of the Merced River and east of the levee. The zoning classification for other undeveloped areas would be Discovery (2B), which allows only very limited facility development. As described in previous alternatives, additional residential and administrative development could occur within the corridor only if consistent with the stringent standards of the Wild and Scenic Rivers Act. Development outside the corridor would also need to protect any ORVs located there. The additional development of existing open spaces for residential and administrative facilities would result in some adverse effects on land use. In addition, some existing uses in El Portal would be inconsistent with the management zoning proposed under Alternative 4. Uses that would be inconsistent with the proposed zoning include the existing commercial raft launch site west of the Foresta Road bridge (Red Bud), the existing residential uses at Trailer Village/Abbieville, the use of the Murchison structures for administrative uses, and the Odger's Storage site. The zoning of these areas in a manner that is inconsistent with their current use would result in a local, long-term, minor adverse effect.

The effects on land use in El Portal from the river corridor boundary, management zone limits, the maximum annual visitor limit, and VERP would result in local, long-term, negligible adverse effects compared to Alternative 1. The reduced development in El Portal would decrease adverse effects, compared to Alternative 1.

Implementation of management zone limits and the VERP program in El Portal would be consistent with the management zoning adopted as part of this alternative.

Impacts to Wawona. Implementation of management zone limits and a maximum annual visitor limit would not affect land use in Wawona. The proposed VERP program is based on and consistent with existing management zoning and existing land uses within the Wawona.

Summary of Alternative 4 Impacts. Under Alternative 4, implementation of management zone limits, the maximum annual visitor limit, and VERP would provide park management with tools to achieve the desired conditions outlined in the management zones. Alternative 4 would be consistent with existing park zoning designations and existing land uses in most areas. In El Portal, the proposed river corridor boundary and management zoning could result in a local, long-term, negligible, adverse effect on land use as compared to Alternative 1.

Cumulative Impacts

The effects of past, present, and reasonably foreseeable future projects are described under Alternative 1. Overall, the cumulative projects would be expected to have local, long-term, minor to moderate, adverse effects on land use due to the potential for additional development of residential and administrative uses and a decrease in open space in the El Portal and Wawona areas. The impacts should be offset somewhat by the planning efforts underway on countywide planning and the El Portal Concept Plan.

The cumulative effects of Alternative 4 and the cumulative projects would be local, long-term, minor to moderate, and adverse.

Transportation

Analysis

The following discussion provides an overview of the types of impacts to transportation conditions associated with Alternative 4. Because transportation services and facilities are not provided in Yosemite wilderness areas, this analysis does not address impacts in the Wilderness segments of the river corridor.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have an adverse effect on transportation. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to transportation associated with redirection of visitors would be short-term, and variable in location and could occur in areas within or adjacent to the park. Therefore, potential impacts to transportation are expected to be minor to moderate, and adverse.

Impacts in Yosemite Valley. Under Alternative 4, park management would manage use levels within the corridor by limiting the number of park visitors and employees allowed within each management zone at any one time. This alternative would also limit the number of visitors on an annual basis. The management zone limits would be representative of existing levels of use in most areas. Therefore, in the short term, implementation of these limits would not be expected to affect transportation. In the long term, these limits could restrict future growth in visitor levels, which would reduce traffic congestion and result in a local, long-term, minor to moderate benefit to transportation. Since transportation effects are primarily related to peak period visitor levels and not annual levels, the maximum annual visitor limit would not affect transportation resources.

Long-term transportation impacts would depend on the management actions implemented under the VERP process. In particular, the VERP program would include monitoring of parking demand and capacity, which correlates with traffic congestion. If the VERP monitoring process determined that indicators and standards were being violated, the park could implement a range of management actions. Depending on the actions, visitation patterns and the associated traffic volumes and transportation conditions could change. If management actions led to lower levels of visitation or parking and transportation improvements, transportation conditions could be improved.

Overall, implementation of Alternative 4 would also have local, long- term, minor to moderate benefits on congestion and parking in the Valley associated with management zone limits that restrict future growth in visitor levels and implementation of VERP. The intensity of the benefits would depend on the specific measures implemented under VERP.

Impacts in the Gorge. The management zone limits for the Gorge segment is based on estimated existing use levels. These limits are not expected to affect transportation in the short term, but could result in lower visitor numbers in the long term. This would result in local, long-term, minor benefits.

Long-term transportation impacts would depend on the management actions implemented under the VERP process. In particular, the VERP program would include monitoring of parking demand and capacity, which correlates with traffic congestion. If the VERP monitoring process determined that indicators and standards were being violated, the park could implement a range of management actions. Depending on the actions, visitation patterns and the associated traffic volumes and transportation conditions could change. If management actions led to lower levels of visitation or parking and transportation improvements, transportation conditions could be improved.

Overall the implementation of management zone limits with VERP for Alternative 4 would be expected to have local, long-term, minor to moderate, beneficial impacts on the transportation system in the Gorge segment. The intensity of the benefit would depend on the specific measures implemented under VERP.

Impacts in El Portal. Alternative 4 provides for a boundary that closely delineates the ORVs along the El Portal segment of the river. The proposed management zoning under Alternative 4 includes more restrictive zoning than any other alternative for much of the area south of the river and is the most restrictive of development opportunities for park administrative facilities. Since this zoning would not likely limit the potential for future administrative or visitor use development in the corridor, this alternative would have a local, long-term, negligible, beneficial effect on transportation resources in El Portal.

The management zone limits for El Portal areas would be based on the management zoning prescriptions and existing use levels for El Portal. In the short term, these limits would not be expected to result in changes in use levels. In the long term, the more restrictive management zoning under Alternative 4 would result in lower future use levels than under Alternative 1. This would result in a local, long-term, negligible to minor benefit on transportation resources.

Long-term transportation impacts would depend on the management actions implemented under the VERP process. In particular, the VERP program would include monitoring of parking demand and capacity, which correlates with traffic congestion. If the VERP monitoring process determined that indicators and standards were being violated, park management could implement a range of management actions. Depending on the actions, visitation patterns and the associated traffic volumes and transportation conditions could change. If management actions led to lower levels of visitation or parking and transportation improvements, transportation conditions could be improved.

Overall the implementation of the El Portal boundary and management zoning, with management zone limits and VERP for Alternative 4 would be expected to have local, long-term, minor to moderate, beneficial impacts on the transportation system in El Portal. The intensity of the benefit would depend on the specific measures implemented under VERP.

Impacts in Wawona. The management zone limits for Wawona are based on estimated existing use levels. These limits are not expected to affect transportation in the short term, but could result in lower visitor numbers in the long term. This would result in local, long-term, minor transportation benefits.

Long-term transportation impacts would depend on the management actions implemented under the VERP process. In particular, the VERP program would include monitoring of parking demand and capacity, which correlates with traffic congestion. If the VERP monitoring process determined that indicators and standards were being violated, the park could implement a range of management actions. Depending on the actions, visitation patterns and the associated traffic volumes and transportation conditions could change. If management actions led to lower levels of visitation or parking and transportation improvements, transportation conditions could be improved.

Overall, the implementation of management zone limits with VERP under Alternative 4 would be expected to have local, long-term, minor to moderate, beneficial impacts on the transportation system in Wawona. The intensity of the benefit would depend on the specific measures implemented under VERP.

Summary of Alternative 4 Impacts. Implementation of management zone limits and management actions taken to address VERP standards would be expected to result in reduced traffic congestion at parking facilities within the river corridor. The effects of Alternative 4 are expected to be local, long term, minor to moderate, and beneficial. The duration and intensity of the benefits would depend upon the specific measures implemented.

Cumulative Impacts

The effects of the cumulative projects on transportation were addressed under Alternative 1. These effects are expected to be local, long term, minor to moderate, and beneficial. The cumulative effect of Alternative 4 and the other projects would also be expected to be local, long term, minor to moderate, and beneficial.

Scenic Resources

Analysis

The following discussion provides an overview of the types of impacts to scenic resources that could occur within each segment of the Merced River corridor under Alternative 4.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have a beneficial effect on scenic resources. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to scenic resources associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to scenic resources is expected to be negligible to minor, and beneficial.

Impacts in Wilderness. Scenic ORVs in the Wilderness segments of the Merced River corridor include views from the Merced River and its banks of the exposed bedrock riverbed, Merced Lake and Washburn Lake, the Bunnell Cascade, the confluence of tributaries, a large concentration of granite domes, and the Clark and Cathedral Ranges.

User capacity within the Wilderness segments would be managed through the existing trailhead quota system and monitoring of wilderness resource conditions. The management zone limits for the Wilderness segments would be set at the existing trailhead quota system levels. Implementation of the VERP program would result in additional monitoring of indicators within wilderness areas (as described under Alternative 2). Since the management zone limits would be set at existing trailhead quotas, no additional management actions would be needed to implement the limits in the wilderness. Therefore, implementation of the management zone limits in the Wilderness segments would have no effect on scenic resources as compared to the No Action Alternative.

Implementation of VERP monitoring and management program for the wilderness areas would result in additional monitoring of indicators within the Wilderness segments. VERP indicators to be monitored in the Untrailed (1A) and Trailed Travel (1B) Wilderness zones include Wildlife Exposures to Human Food and the Number of Encounters With Other Parties. Additional indicators have been identified in areas zoned Heavy Use (1C) (Little Yosemite Valley) and Designated Overnight (1D) (designated overnight areas) due to the more concentrated uses in these areas. The indicators (1) number of people recreating in the River Protection Overlay and (2) people at one time at selected sites will be monitored in 1C zones. The water quality indicator will be monitored in 1D zones. (See table II-5 for the list of indicators and standards by management zones.)

Indicators have been selected to provide overall information on the health of resources within the Wilderness segments. Management actions associated with achieving standards for the (1) number of encounters with other parties and (2) wildlife exposures to human food indicators would not affect the scenic ORVs or visitors' ability to view scenic ORVs in the Wilderness segments. Therefore, implementation of the VERP program would likely have no impact on the scenic resources and the scenic ORVs.

The combination of management zone limits with VERP would be expected to have no impact on the scenic resources and the scenic ORVs within the Wilderness segments of the Merced River corridor.

Impacts in Yosemite Valley. The scenic ORVs within Yosemite Valley segment include views from the Merced River and its banks of waterfalls and water features (Nevada, Vernal, Illilouette, Yosemite, Sentinel, Ribbon, and Bridalveil Falls, and Silver Strand), rock cliffs (Half Dome, North Dome/Washington Column, Glacier Point, Yosemite Point/Lost Arrow Spire, Sentinel Rock, Three Brothers, Cathedral Rocks, and El Capitan), and meadows (Stoneman, Ahwahnee, Cook's, Sentinel, Leidig, El Capitan, and Bridalveil) and forests.

Management zone limits for the Yosemite Valley segment would be set based on the management zoning for the area, available facilities, and existing levels of use. Park management would manage visitor use within the Valley to ensure that the limits for each management zone would not be exceeded. If visitor numbers in any zone exceeded the limits, management would take actions to reduce visitor numbers in that zone. Management actions could include educating visitors about different areas to visit, closing certain areas, removing trails or parking that facilitates access to certain areas, removing other visitor facilities that might encourage use (such as picnic tables or restrooms), or requiring permits or reservations for accessing certain areas within the Valley.

These management actions could result in a local, long-term, negligible, beneficial effect on visitors' ability to view scenic resources within Yosemite Valley because these measures would likely reduce visitation levels in the Valley in the long term, and therefore would decrease traffic and crowding compared to the No Action Alternative.

In addition to managing visitor numbers within the Valley, management actions would be implemented if VERP monitoring showed that standards were not being met. The effects of these additional management actions within the Valley would vary by the action taken. Educational measures designed to change visitor behavior in ways that reduce vegetation trampling, riverbank erosion, and water pollution would likely improve the natural setting and therefore would be expected to result in local, short- and long-term, negligible, beneficial effects on scenic resources. More restrictive measures, such as limits on activities near the river, reduced activity levels, or restrictions on automobile or bus access to the Valley would benefit the natural setting, reduce traffic congestion, and could result in short-term or long-term, beneficial impacts to visitors' ability to observe scenery. Site hardening, such as constructing boardwalks, picnic facilities, or roadway improvements, could result in adverse effects on the natural environment but would be limited to areas designated for higher levels of development and use. New or improved site design would follow the Yosemite Valley design guidelines (NPS 2004c). Because these guidelines require consideration of significant views in all new design, site-hardening activities would likely result in local, long-term, negligible to minor, beneficial effects on scenic resources.

Overall, implementation of the proposed user capacity program with management zone limits and VERP monitoring would likely have a negligible benefit on scenic resources. This benefit would be achieved by reducing traffic congestion and crowding, conserving the natural environment within management zones, and providing better, less crowded, and less obstructed access to valued viewpoints. Where these goals would be achieved through education, site hardening, and other nonrestrictive management actions, the effect on scenic resources is expected to be long term, negligible and beneficial. Management actions that result in broad-based restrictions on visitor transportation options, types of activities, and levels of use could have long-term, negligible to minor, beneficial impacts to scenic resources.

Impacts in the Gorge. The scenic ORVs for the Gorge segment of the river corridor include views from the Merced River and its banks of the Cascades, spectacular rapids among giant boulders, Wildcat Fall, Tamarack Creek Fall, the Rostrum, and Elephant Rock.

Management zone limits for the Gorge segment would be based on the management zoning for this segment as well as available parking. Park management would manage the number of visitors in the Gorge segment to ensure that the management zone limits are not exceeded. If visitor numbers exceeded the limits, management would take actions to reduce use levels by (e.g., by reducing parking). Management actions could also include instituting a day-use reservation program for entry into the park or closing entrance stations when the limit is reached. These measures would control the number of visitors able to access the Gorge segment.

The results of these management actions would depend on the action. Since existing use levels of the Gorge segment are relatively low, management actions that reduce access would likely result in local, long-term, negligible, beneficial effects on scenic resources due to the removal of vehicles in foreground views.

Implementation of the management zone limits in the Gorge segment is expected to result in negligible effects in the short term because existing use in this segment is relatively low and the limit would be set close to existing use levels. In the long term, the level of use under Alternative 4 would likely be lower than under the No Action Alternative. Since current use levels are low and there are few crowding problems, a reduction in use would provide local, long-term, negligible benefits to scenic resources in the Gorge segment.

Additional management actions would be implemented if VERP monitoring showed that standards were not being met. The effects of these management actions within the Gorge segment would vary by the action. Educational measures are expected to result in local, short- and long-term, negligible effects. More restrictive measures, such as limiting vehicle access and parking, limiting activities near the river, or reducing visitor levels would be expected to provide for a less crowded and more natural environment.

The effects of the measures would depend on the duration of the restrictions, as well as on whether the restrictions were selective in terms of areas and activities or were more broad-based, such as an overall reduction in visitors allowed through the park entrance stations. Short-term, selective restrictions would be expected to result in local, short-term, negligible, beneficial effects on visitors' ability to experience scenic resources. Site hardening, such as construction of boardwalks, picnic facilities, or roadway improvements, could result in adverse effects on the natural environment but would be limited to areas designated for higher levels of development and use in areas zoned Attraction (2D) and Park Operations and Administration (3C) zones. New or improved site design would follow the Yosemite Valley Design Guidelines. Because these guidelines require consideration of significant views in all new design, site-hardening activities would be expected to result in local, long-term, negligible, beneficial effects to scenic resources in these areas.

Overall, the implementation of management zone limits with VERP monitoring within the Gorge segment is expected to have local, long-term, negligible, beneficial impacts on scenic resources related to reduced traffic and crowding and reduced impacts to the natural environment. Management actions that achieve these goals through education and site hardening would have long-term, negligible, beneficial effects on scenic resources. More restrictive management actions could have local, short- or long-term, negligible to minor, beneficial effects on scenic resources.

Impacts in El Portal. Scenic resources in the El Portal segment of the river corridor consist of views of the geologic transition between granite and metasedimentary bedrock along the canyon walls and distinct views of Chinquapin Fall.

The boundary for the El Portal segment of the river in Alternative 4 would be based on the locations of specific ORVs. Primarily low-density zoning (2A and 2B) would be applied, except in limited existing developed areas (3C). The Trailer Village/Abbieville area would be zoned for Day Use, which would allow for future development of visitor facilities (e.g., parking, restrooms, picnic areas). Compared to Alternative 1, Alternative 4 would result in less additional development or redevelopment within most areas of the El Portal segment and thus less potential for changes in scenic resources. Due to the small number of visitors and the existing development in the area, the overall effect of Alternative 4 on scenic resources in El Portal is expected to be local, long-term, negligible, and beneficial compared to the No Action Alternative.

Implementation of management zone limits for the El Portal segment would be expected to have a negligible effect on scenic resources in the short term due to the low level of visitor use. In the long term, enforcement of management zone limits for this segment could limit future development of visitor facilities, require removal of existing informal parking areas, or require additional restrictions on visitor activities such as rafting, kayaking, or fishing. Implementation of these types of measures is expected to have local, long-term, negligible, beneficial effects on scenic resources.

Implementation of VERP within the El Portal segment would include monitoring of the indicators identified for the areas zoned 2A, 2B, and 3C. The effects of management actions would vary by the action. Educational measures to change visitor and employee behavior related to activities that could adversely affect vegetation and water quality would be expected to result in local, long-term, negligible, beneficial effects on scenic resources by improving the natural setting. More restrictive measures, such as limiting activities near the river or reducing activity levels, are expected to result in a negligible, beneficial effect to scenic resources, but the duration and the intensity of the effect would depend on whether the restrictions were short or long term and selective or broad-based. Site hardening, such as the construction of parking or picnic facilities, would generally occur only in existing developed areas such as the Trailer Village, Old El Portal, Rancheria Flat, and Railroad Flat. Therefore, these management actions would have no effect on scenic resources.

Impacts in Wawona. The scenic ORVs for the Wawona segments of the river corridor include views from the Merced River and its banks of large pothole pools within slickrock cascades, old growth forest, and meadows, Wawona Dome, and continual whitewater cascades in the deep and narrow river canyon below Wawona.

Implementation of management zone limits for Wawona would require park management to enforce limits on the number of visitors in each zone. Management actions to address VERP indicators and standards in Wawona would be similar to those described above. Since most areas in the Wawona segments are zoned for low-intensity visitor use, management actions taken in response to VERP monitoring would likely focus on more restrictive measures. Visitor education efforts in response to monitoring of natural resource and social conditions would be expected to result in local, long-term, negligible benefits to scenic resources by improving the natural environment. More restrictive measures, such as restrictions on activities or use levels in various areas, are expected to result in negligible, beneficial effects on scenic resources.

In the river corridor below Wawona, which is zoned for Undeveloped Open Space (2A+), management actions in response to VERP monitoring would likely focus on education and more restrictive measures to reduce use levels and restore natural resources. Site hardening would not be appropriate in this area. Measures to reduce the number of people and impacts to natural resources would be expected to have long-term, negligible, beneficial effects on scenic resources. More restrictive measures, such as enforced limits on the number of people accessing the area, would benefit the scenic ORVs by creating an improved natural environment.

Summary of Alternative 4 Impacts. Compliance with existing park polices, including the Yosemite Valley design guidelines, would help ensure that the scenic ORVs in the Wilderness, Yosemite Valley, Gorge, and Wawona segments are protected and enhanced. Implementation of management zone limits and VERP monitoring would potentially result in restrictions on visitor use throughout the Merced River corridor. These restrictions would likely improve the natural environment and result in a local, long-term, negligible, beneficial impact on scenic resources. Under Alternative 4, implementation of management zone limits along with the VERP program would result in long-term, negligible, beneficial impacts on scenic resources.

Cumulative Impacts

Cumulative impacts from past, present, and reasonably foreseeable future actions in conjunction with Alternative 4 would be the same as described for Alternative 1.

Overall, these cumulative actions, in combination with Alternative 4, could have a net long-term, minor, adverse impact on scenic resources and the scenic ORVs within the Merced River corridor.

Impairment

Alternative 4 is expected to result in long-term, minor, beneficial impacts on scenic resources and therefore would not be expected to impair the scenic ORVs for future generations.

Socioeconomics

Social Environment

Analysis

Under Alternative 4, the National Park Service would supplement existing user capacity program elements with management zone limits and a VERP program. (The maximum annual visitor limit would not affect the social environments.) Social environments within the river corridor could be affected by changes in employee housing in the developed areas and by changes in commute times to park duty stations. Under Alternative 4, the river corridor boundary for the El Portal segment would closely follow the location of ORVs within the El Portal Administrative Site.

Impacts in Wilderness. There are limited facilities in wilderness areas, and few employees are stationed in these areas. Under Alternative 4, wilderness management would continue in its present form and there would be no change to employee levels in wilderness areas. As described under Alternative 2, implementation of management actions under VERP could result in some increase or decrease in wilderness activities, but overall there would likely be a local, long-term, negligible, adverse impact on the social environment in wilderness areas.

Impacts in Yosemite Valley. Implementation of management zone limits for Yosemite Valley would require management actions designed to control visitor levels within each specific zone. Management focus would be on visitors in most zones, but the number of employees and residents would also be managed, particularly in park operations and administrative zones. Management zone limits in park operations and administrative zones have been set close to existing use levels and would allow for current levels of employee housing, but would constrain future growth in administrative uses within management zones in the Valley. This would be expected to result in a local, long-term, negligible, adverse effect on the social environment in the Valley, compared to Alternative 1.

Implementation of a VERP program in Yosemite Valley under Alternative 4 would have the same effects described under Alternative 2. The effects of potential management actions in the Valley would vary by the action taken. Actions designed to reduce employee housing in the Valley could result in a local, long-term, minor to moderate, benefit to the social environment in the Valley by reducing crowding. Employees relocated would face increased commute times for Valley employees relocated outside the Valley, resulting in a local, long-term, minor to moderate, adverse effect. Restrictions on the use of areas or on activities in various areas could reduce recreation opportunities for Valley residents. However, because Valley residents have access to a broad range of recreation activities, these restrictions would likely result in a local, long-term, negligible to minor, adverse effect on recreation opportunities.

Overall, implementation of Alternative 4 could result in local, long-term, minor to moderate benefits on the social environment from reduced crowding. However, employees relocated from the Valley would be adversely affected due to increased commutes.

Impacts in El Portal. Implementation of management zone limits within El Portal would allow for an increase in employee housing in El Portal, consistent with the *General Management Plan*. This increase could result in a local, long-term, minor to moderate, adverse effect on the social environment and community amenities due to increased population pressures.

VERP management actions could result in restrictions on certain activities within the river corridor in El Portal. As described under Alternative 2, implementation of restrictive management actions in response to VERP monitoring would likely result in local, long-term, negligible to minor, adverse effects on recreation opportunities and employee commuting options.

The river boundary for the El Portal segment of the river in this alternative was closely based on the location of identified ORVs within the El Portal Administrative Site. Alternative 4 would result in fewer areas being zoned for additional administrative development (3C) and proposes one of the lowest density zoning classifications, Open Space (2A), for much of the undeveloped area south of the Merced River and east of the levee. The zoning classification for other nondeveloped areas would be Discovery (2B), which allows only very limited facility development. Since Alternative 4 proposes much more restrictive management zoning for the areas included within the corridor, it would likely result in less development in El Portal compared to Alternative 1. Since this alternative would likely result in less development, the potential for adverse effects on community amenities would be reduced compared to Alternative 1, resulting in a local, long-term, minor to moderate, beneficial effect.

Impacts in Wawona. Implementation of management zone limits within Wawona would allow for an increase in employee housing in El Portal, consistent with the *General Management Plan*. This increase could result in a local, long-term, minor to moderate, adverse effect on the social environment and community amenities due to increased population pressures.

VERP management actions could result in restrictions on certain activities within the river corridor in Wawona. As described under Alternative 2, implementation of restrictive management actions in response to VERP monitoring would likely result in local, long-term, negligible to minor, adverse impacts on recreation opportunities and employee commuting options.

Summary of Alternative 4 Impacts. Under Alternative 4, park management would implement management zone limits set near existing use levels, but allowing for some increase in employee housing in El Portal and Wawona, consistent with the *General Management Plan*. Reallocation of employee housing from Yosemite Valley to El Portal and Wawona could result in local, long-term, minor to moderate benefits on the social environment in Yosemite Valley but local, long-term, minor to moderate, adverse effects on the social environments in El Portal and Wawona. The proposed El Portal boundary and management zoning under Alternative 4 would offset this adverse effect somewhat as compared to Alternative 1. Implementation of VERP monitoring could result in local, long-term, minor to moderate, adverse effects on the social environment through population changes and increased commutes for relocated employees. The intensity of the effects would depend on the amount of housing relocated and where replacement housing is sited. Effects on recreation opportunities within the corridor communities would be negligible to minor.

Cumulative Impacts

The effects of the cumulative projects on the social environment are discussed under Alternative 1.

The cumulative projects would have a local, long-term, minor to moderate, adverse effect on the social environments within the corridor due to increased housing in El Portal and Wawona and increased commute times to Yosemite Valley. The impact intensity of any planning projects would depend on the extent to which the plan's recommendations are implemented.

Alternative 4 and the cumulative projects would have a local, long-term, minor to moderate, adverse cumulative effect on the social environments within the corridor due to decreases in housing and social amenities near housing and increases in commuting time in Yosemite Valley, and increases in housing in El Portal and Wawona. The impact intensity would depend on the extent to which the cumulative projects' recommendations are implemented. The adverse effects in El Portal would be reduced, as compared to Alternative 1, due to the more restrictive management zoning proposed under Alternative 4.

Visitor Populations

Analysis

Alternative 4 would implement management zone limits, a maximum annual visitor limit, and a VERP program in addition to other existing park policies regarding user capacity within the river corridor.

Proposed management zone limits are set near existing visitor levels for each management zone within the park. Therefore, visitor population impacts are not expected in the short term. In the long term, visitor population levels could be constrained by the established management zone limits or the maximum annual visitor limit, as compared to visitor population levels under Alternative 1. The effect of management zone limits on visitor populations is expected to be local, long-term, minor to major, and adverse due to the likely lower numbers of visitors as compared to Alternative 1.

Implementation of VERP under Alternative 4 would have the same effects described under Alternative 2. The effects on visitor populations from management actions taken under VERP would be negligible for less restrictive measures, such as visitor education or limitations on activities in specific areas. The potential effects on visitor populations from temporary restrictions during peak periods would be local, short term, minor to moderate, and adverse. Permanent limits or restrictions are likely to result in local, long-term, moderate to major, adverse effects on visitor populations compared to Alternative 1.

Summary of Alternative 4 Impacts. Alternative 4 could result in local, long-term, minor to major, adverse effects resulting from restrictions on visitor populations related to management zone limits, maximum annual corridorwide visitation limits, and implementation of VERP.

Cumulative Impacts

The effects of the cumulative projects on visitor populations are discussed under Alternative 1.

The cumulative projects would have a regional, long-term, negligible to minor, adverse impact on visitor populations due to the overall reduction in overnight accommodations in Yosemite Valley. This adverse effect would be offset somewhat by additional overnight accommodations being constructed outside the park.

Alternative 4 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a regional, long-term, minor to major, adverse impact on visitor populations due to a possible overall reduction in the number of lodging and camping units in the park and potential limits on visitor numbers to comply with management zone limits and the annual visitor limit.

Regional Economy

Analysis

Implementation of management zone limits and an annual maximum visitor limit could result in lower visitor levels in the park in the long term compared to Alternative 1. These lower visitation levels would likely result in lower visitor spending in communities in the region. Therefore, management zone limits could result in regional, long-term, minor, adverse effects on the regional economy.

VERP management actions that affect visitor populations, such as restrictions on specific activities, on the use of specific areas, or on the levels of day use within the river corridor, would have the most effect on the regional population. The effect on the regional economy would differ depending on the management actions taken. Temporary visitor restrictions or restrictions on specific activities within the corridor would likely result in local, short-term, negligible to minor beneficial effects if visitors temporarily displaced from the park spend more time in regional communities. Longer term restrictions on levels of visitor use would likely result in long-term, regional, minor, adverse effects if visitor restrictions were placed on day-use levels and, therefore, fewer visitors attempted to reach the park. The intensity of the effects would depend on the duration and extent of any potential restrictions or use level reductions. Other management actions that might be taken to address VERP standards include the expansion of visitor facilities or site hardening in areas zoned for intensive visitor use. These actions could result in regional, long-term, negligible, beneficial effects on the regional economy through increased construction spending and employment.

Summary of Alternative 4 Impacts. Implementation of management zone and annual visitor limits under Alternative 4 would likely result in regional, long-term, minor, adverse effects on the regional economy. Management actions implemented under VERP could have regional, long-term, negligible to minor benefits to regional, long-term, minor, adverse effects, depending on the measure implemented. The effect on the regional economy would likely be long-term, minor, and adverse compared to Alternative 1.

Cumulative Impacts

The effects of the cumulative projects on the regional economy are described under Alternative 1.

The cumulative projects would have a short-term, minor, beneficial effect on the regional economy, primarily due to construction spending and employment. The cumulative projects would have a long-term, negligible to minor, beneficial effect on the regional economy due to increased regional output and employment from increased overnight accommodations in the park and in local communities.

Alternative 4 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor, adverse impact on the regional economy due to the potential for long-term reductions in visitor populations compared to Alternative 1, which would reduce visitor spending in the region. This impact in the regional economy would be long-term, minor, and adverse. These effects would be offset to some degree by an increase in construction employment and spending, which would have a short-term, negligible to minor, beneficial, effect on the regional economy.

Concessioner

Analysis

Implementation of management zone limits and an annual visitor limit under Alternative 4 would likely result in lower visitor levels in the park in the future compared to Alternative 1. Current visitor levels are not expected to decrease as a result of the management zone limits, but future growth in visitor levels would be constrained. As concessioner operations are directly related to visitor numbers in the park, impacts on the concessioner from the management zone limits are expected to be local, long term, minor to moderate, and adverse.

Implementation of VERP under Alternative 4 would have the same effects on the concessioner as described under Alternative 2. Measures taken to address VERP standards could include restrictions on specific activities (rafting, horseback riding, etc.), on the use of specific areas, or on the levels of day use within the river corridor. These restrictions could result in local, long-term, adverse effects on concessioner operations. Other management actions that might be taken to address VERP standards include the expansion of visitor facilities in areas zoned for intensive visitor use. These actions could result in local, long-term, beneficial effects on the concessioner.

Summary of Alternative 4 Impacts. Under Alternative 4, management zone and annual visitor limits could result in lower visitor levels in the long term, compared to Alternative 1. Management actions taken to address VERP standards could result in restrictions on specific activities or more general restrictions on visitor levels, resulting in local, long-term, adverse effects on concessioner operations. The intensity of the effect would vary depending on the extent of the restrictions imposed. Management actions that increase visitor services could result in local, long-term, beneficial effects on concessioner operations.

Cumulative Impacts

The effects on concessioner operations from past, present and reasonably foreseeable future actions were described under Alternative 1.

The cumulative projects would have a local, long-term, minor to moderate, adverse impact on the primary park concessioner associated with locating new employee housing outside of the Valley and potential additional restrictions on activities and facilities in wilderness areas.. The adverse effect would be partially offset by increased accommodations being developed in Curry Village and at Yosemite Lodge. The impact intensity of any planning projects would depend on the extent to which the *Yosemite Valley Plan's* recommendations are implemented.

Alternative 4 and the cumulative projects within and in the vicinity of Yosemite National Park would result in a long-term, minor to moderate, adverse impact on the concessioner associated with lower visitor numbers under the visitor limits, the location of new employee housing outside of the Valley, and potential additional restrictions on activities and facilities in wilderness areas., These adverse effects might be offset somewhat by actions that increase visitor services within some areas of the Valley.

Park Operations and Facilities

The National Park Service is committed to the implementation of a User Capacity Management Program to protect and enhance the Merced River corridor's Outstandingly Remarkable Values. The park initiated monitoring associated with the VERP component of this program in 2004, a copy of the 2004 Annual Report is available on the park's website (www.nps.gov/yose/planning/ucmp.htm) and has secured funding for the continuation of this program through fiscal year 2008. In addition, the park has established a VERP Coordinator position and has retained a team of technical experts to assist with the development, refinement, and implementation of this program. The National Park Service is committed to implementation of this program beyond 2008 to fully comply with Wild and Scenic River's Act requirements and to achieve the goals and objectives of protecting and enhancing the Merced River corridor's Outstandingly Remarkable Values.

Analysis

The following discussion provides an overview of the types of impacts to park operations, infrastructure, facilities, and energy consumption that could occur within of the Merced River corridor under Alternative 4. Effects on park operations from the revised corridor boundaries and zoning in El Portal are also addressed for the El Portal segment.

Management actions associated with the redirection of visitors from areas within the Merced River corridor to areas outside of the Merced River corridor could have an adverse effect on park operations. However, redirection of visitors is expected to only occur at site-specific locations or during peak visitation periods on summer and holiday weekends. Impacts to park operations associated with redirection of visitors would be short-term, and variable in location. Therefore, potential impacts to park operations are expected to be moderate, and adverse. Redirection of visitors could involve park staff from the Visitor and Resource Protection, Facility Maintenance, Business and Revenue Management and Interpretation and Orientation divisions during traffic management activities and get coordination with local communities and media outlets.

Park Operations

Impacts in Wilderness. Implementation of management zone user capacity limits with VERP in the Wilderness segments under Alternative 4 would include the monitoring of indicators in various management zones (see table II-5). The indicators would be monitored as an additional element of ongoing ranger patrols and other existing park operations activities in the Wilderness segments such as WIMS. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in the Wilderness segments.

The additional VERP monitoring, reporting of results to the public, and potential management actions in the Wilderness segments of the river corridor would likely increase park staff workloads. However, given the seasonal nature of visitation to wilderness areas and the limited number of visitors as a result of the existing trailhead quota system, this increase would likely result in a long-term, minor, adverse impact to park operations.

Although the limits for each management zone in the Wilderness segments would continue to be managed through the trailhead quota system, it is not expected that additional park staff or new facilities would be necessary in these segments under Alternative 4.

Impacts in Yosemite Valley. Implementation of management zone user capacity limits with VERP in Yosemite Valley under Alternative 4 would include the monitoring of indicators in various management zones. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in Wilderness segments.

The additional VERP monitoring, reporting of results to the public, and potential management actions, combined with implementing and managing a limit for individual management zones in the Valley, would increase park staff workloads. It is expected that this increase in workloads would result in an overall long-term, major, adverse impact to park operations, mostly during the summer months when visitation is highest.

Implementing a limit within each management zone in addition to VERP monitoring would require park management to monitor the number of visitors and/or vehicles entering and exiting each management zone in the Valley. If the limits were exceeded, management actions limiting access could be required. Implementing management zone limits under Alternative 4 would likely consist primarily of enforcing facility and parking capacities during peak use (summer and some weekend holidays) and would require additional park staff and facilities to conduct monitoring and implement appropriate management actions.

Impacts in the Gorge. Implementation of management zone user capacity limits with VERP in the Gorge under Alternative 4 would include the monitoring of indicators in various management zones. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in the Gorge segment.

The Gorge segment has limited visitor and other park facilities. The additional VERP monitoring, reporting of results to the public, and potential management actions combined with management zone user capacity limits in the Gorge segment would likely increase park staff workloads. The management zone limits in this segment would require additional efforts by park staff to implement management actions if the limit was exceeded. However, because there is limited visitor use in the Gorge during most of the year, any additional effort would typically occur during periods of high use (summer and some holiday weekends). Therefore, this increase in park staff workloads is expected to result in an overall long-term, minor to moderate, adverse impact to park operations.

Impacts in El Portal. Implementation of management zone user capacity limits with VERP in the El Portal segment would include the monitoring of indicators in the various management zones. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in the El Portal segment.

The additional VERP monitoring, reporting of results to the public, and potential management actions, combined with management zone user capacity limits in the El Portal segment, would likely increase park staff workloads, resulting in an overall long-term, negligible to minor, adverse impact to park operations.

Approximately 132 acres would be zoned as Park Operations and Administration (3C) under Alternative 4 in El Portal. The remaining acreage in this segment would be zoned Discovery (2B) (277 acres) and Open Space (2A) (404 acres). Alternative 4 represents the most restrictive zoning and corridor configurations of all the alternatives. The National Park Service would be required to protect and enhance ORVs located in this segment in accordance with Wild and Scenic Rivers Act. However, the area zoned 3C under Alternative 4 would allow very little flexibility within the river corridor for park management to relocate utilities, facilities, and services to El Portal that are currently within park boundaries. Therefore, the river corridor boundary and zoning under Alternative 4 would likely result in an overall long-term, moderate, adverse impact to park operations.

The management zone user capacity limits in the El Portal segment would require additional efforts by park staff to implement management actions if the limits were exceeded. Any additional efforts would typically occur during periods of high use (summer and some holiday weekends). Therefore, this increase in park staff workloads would likely result in an overall long-term, minor to moderate, adverse impact to park operations.

Impacts in Wawona. Implementation of management zone limits with VERP in the Wawona segments under park jurisdiction would include the monitoring of indicators in various management zones. If VERP monitoring results indicated that the established standards for these indicators were being exceeded, management actions would be implemented to maintain desired conditions in the Wawona segments.

The additional VERP monitoring, reporting of results to the public, and potential management actions, combined with management zone user capacity limits, would likely increase park staff workloads, resulting in an overall long-term, moderate to major, adverse impact to park operations.

The management zone user capacity limits in the Wawona segments would require additional efforts by park staff to implement management actions if the limits were exceeded. Any additional effort would typically occur during periods of high use (summer and some holiday weekends). Therefore, this increase in park staff workloads would likely result in an overall long-term, moderate to major, adverse impact to park operations.

Park Infrastructure and Facilities

Impacts in Wilderness and the Gorge. Implementation of management zone user capacity limits with VERP is not expected to require changes to, or the need for, any new park infrastructure and facilities. Therefore, Alternative 4 would not affect park infrastructure and facilities.

Impacts in Yosemite Valley and Wawona. Implementation of management zone user capacity limits with VERP could require that traffic checkpoints and/or additional traffic monitoring equipment be put in place, particularly during periods of high use (summer and some holiday weekends). These actions would likely result in a long-term, moderate, adverse impact to park infrastructure and facilities, depending on the type and nature of the additional facilities.

Impacts in El Portal. With the river boundary and management zoning in El Portal under Alternative 4, approximately 132 acres would be zoned as Park Operations and Administration (3C). The remaining acreage in this segment would be zoned Discovery (2B) (277 acres) and Open Space (2A) (404 acres). Alternative 4 represents the most restrictive zoning and corridor configurations of all the alternatives. The National Park Service would be required to protect and enhance ORVs located in the El Portal segment in accordance with the Wild and Scenic Rivers Act. However, the area zoned 3C under Alternative 4 would allow very little flexibility for park management to relocate utilities, facilities, and services to El Portal that are currently within park boundaries. The removal of some park infrastructure and facilities in Yosemite Valley, the design and construction of new facilities in the El Portal Administrative Site, and the removal of decommissioned facilities would result in a short-term, minor, impact to park infrastructure and facilities. Therefore, the river corridor boundary and zoning under Alternative 4 would likely result in an overall long-term, minor to moderate, adverse impact to park infrastructure and facilities.

The management zone user capacity limits in the El Portal segment would require additional efforts by park staff to implement management actions if the limits were exceeded. Any additional effort would typically occur during periods of high use (summer and some holiday weekends). However, it is expected that an increase in monitoring would result in a long-term, minor to moderate, adverse impact to park facilities and infrastructure.

Energy Consumption

Impacts in Wilderness, Yosemite Valley, Gorge, El Portal, and Wawona. Implementation of a user capacity program with VERP and management zone limits is not expected to substantially increase or decrease the amount or types of energy consumed in the river corridor segments compared to Alternative 1. However, the addition of employee housing on a corridorwide basis in the El Portal, Yosemite Valley, and Wawona segments would require an increase in overall energy consumption, resulting in a long-term, minor, adverse impact compared to Alternative 1. Alternative 4 is expected to result in an overall long-term, minor, beneficial impact with respect to vehicle energy consumption, primarily due to improved fuel economy and the increased use of alternative fuels.

Summary of Alternative 4 Impacts. Implementation of management zone user capacity limits with VERP in the Wilderness, Yosemite Valley, Gorge, El Portal, and Wawona segments of the river corridor would require changes to and increase the need for new park infrastructure and facilities. Therefore, Alternative 4 would likely result in long-term, minor to major, adverse impacts to park operations and park infrastructure and facilities.

In El Portal, the river corridor boundary and zoning under Alternative 4 would result in an overall long-term, moderate, adverse impact to park operations and an overall long-term, minor to moderate, adverse impact to park infrastructure and facilities.

Implementation of management zone user capacity limits with VERP is not expected to increase the amount or types of energy consumed in the river segments compared to Alternative 1. This alternative would result in an overall long-term, minor, beneficial impact with respect to vehicle fuel consumption, primarily due to improved fuel economy and the increased use of alternative fuels.

Cumulative Impacts

The cumulative effects to park operations from past, present, and foreseeable future actions would be the same as those described for Alternative 1. Overall, these cumulative actions, in combination with Alternative 4 could have a net long-term, minor, beneficial effect on park operations in the Merced River corridor.

Impairment

The National Park Service has a management responsibility to conserve the scenery, natural and historic objects, and wildlife resources of the park. Park operations are not subject to the impairment standard.

Unavoidable Adverse Impacts

The following discussion identifies unavoidable adverse impacts to resources associated with implementation of Alternative 4, which consists of the establishment of management zone limits based upon proposed management zone capacity factors. For the purposes of this document, these impacts have been identified as being unavoidable, moderate to major, and adverse.

No impacts associated with the implementation of Alternative 4 have been identified as being unavoidable, moderate to major, and adverse to natural and cultural resources. However, unavoidable adverse impacts to the visitor experience and to park operations could occur if more restrictive management actions were taken to ensure that the ORVs are protected and enhanced.

Unavoidable adverse impacts could result if visitors were limited in their ability to freely move about within individual management zones, or restricted from entering the a specific management zone. In addition, unavoidable adverse impacts could occur to park operations as a result of the need for additional staff and resources necessary to adequately enforce more restrictive management actions.

Irreversible and Irretrievable Commitments of Resources

This section identifies any resources that would be lost either temporarily or permanently as a result of Alternative 4. Alternative 4 consists of the establishment of management zone limits based upon proposed management zone capacity factors.

Relocating existing facilities and/or the development of new facilities in El Portal would result in the expenditure of energy to relocate or develop the facility. In addition, relocating existing facilities and/or construction of new facilities would involve an irreversible commitment of construction-related materials, such as concrete, asphalt, wood, and metal.

Similar to Alternatives 1, 2 and 3, energy consumption in the park will continue into the future resulting in an irreversible and irretrievable commitment of energy sources. However, overall energy consumption is expected to decrease with time as the park converts to more efficient types of equipment, and fleet vehicle turnover occurs resulting in the use of more technically advanced and energy-efficient vehicles.

Relationship of Short-Term Uses of the Environment and Long-Term Productivity

The river corridor and management zoning associated with Alternative 4 for El Portal would allow for development of park administrative facilities within 132 acres of the 814 acres within the corridor (primarily north of the river). Potential development would occur in a manner which protects the ORVs within this management zone; however, these actions could temporarily adversely effect resources during construction. Once completed, the relocated and/or newly constructed facilities would have a long-term benefit to park operations.

Responsiveness of Alternative 4 to the Ninth Circuit Court of Appeals' Direction on the Merced River Plan

The Ninth Circuit Court of Appeals directed the National Park Service to revise the Merced River Plan to address user capacity and to draw the boundaries in the El Portal segment in a manner that protects its ORVs. In addition, the District Court for the Eastern District of California directed the National Park Service to address how the Merced River Plan would amend the 1980 *General Management Plan*.

User Capacity

In addressing user capacity, the Ninth Circuit Court of Appeals specifically directed the National Park Service to "adopt specific limits on user capacity" and that "such limits describe an actual level of visitor use that will not adversely impact the Merced's ORVs."

Alternative 4 includes each of the specific, measurable limits on types and levels of use that are included within Alternative 1, as well as a maximum visitor limit by management zone and a maximum annual visitation limit for the river segment, in addition to implementation of the VERP program. Management of Wilderness segments would continue under the existing trailhead quota system (1,280 overnight visitors in Yosemite wilderness areas) and WIMS, with the addition of the VERP program.

The maximum visitor limit by management zone under Alternative 4 would limit the number of visitor in each management zone at one time. The proposed management zone limits would be based on capacity levels that approximate existing use levels. Because real-time monitoring and control of visitors by management zone would require construction of fences or control points throughout the river corridor, implementation of Alternative 4 would be based on periodic sampling of visitor numbers in the various management zones. These sampling periods would be concentrated during peak periods. Park management would take actions to limit use levels in the management zones if the proposed limits were exceeded.

In addition to the maximum visitor limits by management zone, the National Park Service would implement a maximum annual visitor limit of 3.27 million for the river corridor. This annual limit would be set at a level that ensures that the maximum management zone limit levels would not be met on most days of the year.

Under Alternative 4, the National Park Service would also implement a VERP program. Under the VERP program, the National Park Service has adopted a host of indicators (measured variables) and standards (measured values) that reflect the qualitative conditions for the management zones in quantitative form. The standards have been set at levels designed to protect and enhance ORVs (see table II-5). The standards are scientifically measurable limits, and the standards will be measured through a monitoring program designed for each specific indicator. The standards provide clear, documented triggers for management action. If a standard is being met, management action is not required. If conditions are declining (but have not yet fallen below a set standard), management action may be taken to improve the condition and forestall continued decline. If monitoring indicates that conditions do not meet established standards, management action must be taken. Table II-3 presents a list of the types of management actions that can be taken to address conditions documented through the VERP program. VERP data would be used to ensure that the adopted limits are adequate to protect and enhance the ORVs. If adopted standards are not being met, visitor levels could be restricted beyond the adopted management zone limits described above.

Alternative 4 provides specific measurable limits on daily and annual visitor numbers and on employees within the corridor. In addition, the VERP program included in Alternative 4, along with the existing user capacity measures from the No Action Alternative, will provide an adequate array of specific, measurable limits on types and levels of use to ensure that the river's ORVs are being protected and enhanced. As a result, this alternative complies with the Court direction requiring specific, measurable limits on user capacity.

El Portal Boundary

The Court directed that the National Park Service "redetermine the river area boundaries at El Portal" and that these boundaries "must be drawn so as to protect and enhance the ORVs causing that area to be included within the Wild and Scenic River System." In response to this direction from the court, the National Park Service gathered data on ORVs in El Portal, and used this data to inform the width of the boundaries and the zoning applied within those boundaries.

In El Portal, Alternative 4 proposes a river corridor boundary that closely follows the locations of the ORVs for the El Portal segment. The proposed zoning under this alternative would allow development of park administrative facilities in limited existing developed areas, if development can be completed in a manner which protects the ORVs. Undeveloped areas south of the river are zoned 2A (Open Space) and 2B (Discovery) which would not allow for development of park administrative facilities or most visitor facilities.

The additional data gathered on the location of ORVs together with the more restrictive zoning across a larger portion of the El Portal Administrative Site provide for the protection of ORVs. Further, all facility development proposed within the El Portal Administrative Site would undergo environmental compliance review, which would require the proposed development to be consistent with all of the elements of the Merced River Plan, including the protection and enhancement of ORVs.

The proposed boundary under Alternative 4 meets the Court direction to redraw the boundary so as to protect the ORVs for this segment of the river.

Amendments to the 1980 *General Management Plan*

The Wild and Scenic Rivers Act requires the managing agencies to prepare comprehensive management plans for the river and its immediate environment. The Merced River Plan, as revised by this document, provides direction on these issues for the 81 miles of the Merced Wild and Scenic River under the jurisdiction of the National Park Service.

Congress further authorized the National Park Service to prepare its management plan for the river by making appropriate revisions to the park's 1980 *General Management Plan* (16 USC 1274[a][62]). The Wild and Scenic Rivers Act generally provides that river management plans "shall be coordinated with and may be incorporated into resource management planning for affected adjacent Federal lands" (16 USC 1274).

While it is not the policy of the National Park Service retroactively to revise existing plans, Section 1274(a)(62) of the Wild and Scenic Rivers Act requires that the *General Management Plan* be revised to meet the requirements of section 1274(b). Accordingly, the Merced River Plan adopted in November 2000 resulted in the following amendments to the *General Management Plan*. The Merced River Plan's management zoning, River Protection Overlay, river corridor boundaries (with the exception of the El Portal segment) and classifications, and the ORVs revise the *General Management Plan* by establishing more detailed land-use prescriptions that must be applied in future site-specific planning. The Merced River Plan's Section 7 determination process is a tool that augments the goals of the *General Management Plan*. If selected, this alternative further revises the *General Management Plan* by adopting new boundaries and zoning for the El Portal areas and by adopting a VERP program. No development or use of park lands in the areas within the river corridor shall be undertaken that is inconsistent with the Wild and Scenic Rivers Act designation of the Merced River, or that is inconsistent with the Merced River Plan, as revised by the Revised Merced River Plan/SEIS.

General Management Plan Goals

The *General Management Plan* establishes five broad goals for managing Yosemite National Park (NPS 1980a, pp. 1-4). Although the *General Management Plan* is over 20 years old, its goals are still valid today and apply to the management of the Merced River corridor under the Merced River

Plan. The Merced River Plan and this revision work in concert with the goals set forth in the *General Management Plan*, and outline an additional set of specific goals for management of the Merced Wild and Scenic River (MRP pp. 23-24). The Merced River Plan's five goals were developed to further the policy established by the Wild and Scenic Rivers Act, namely to preserve designated rivers in their free-flowing condition, and protect and enhance the river's ORVs. The five defining goals of the *General Management Plan* and the five goals of the Merced River Plan are intertwined, and no one goal can be emphasized to the complete exclusion of the others.

General Management Plan Management Objectives

The *General Management Plan* sets forth a number of Management Objectives that guide resource management, visitor use, and park operations (NPS 1980a, pp. 5-10). The elements of the Merced River Plan, including the revisions made by this alternative, provide an added level of detailed guidance to park managers on how to achieve management objectives for the park. Those elements are boundaries, classifications, protection of ORVs, Section 7 determination process, River Protection Overlay, management zoning, and VERP. For example, projects within the river corridor must protect and enhance ORVs and be consistent with the other elements of the Merced River Plan. Projects adjacent to the river corridor must protect ORVs, and depending on location, may need to undergo a Section 7 review if they affect the bed or banks of the river.

General Management Plan Land Management Zoning

The *General Management Plan* (GMP pp. 10-13) specifies several land management zones, including a Development Zone. The management zones described in the Merced River Plan and the management zones proposed for the El Portal segment for Alternative 4 as illustrated in figure III-4 replace the Management Zoning Plan of the *General Management Plan* for those areas within the Merced Wild and Scenic River corridor boundaries. Zoning of areas outside the river corridor boundary remains unchanged; however, development and uses in areas adjacent to the river corridor must be protective of ORVs, as provided for in the Merced River Plan.

General Management Plan Visitor Use

Adoption of the management zone limits and the annual corridorwide visitation limit would not amend the long-term visitor capacity goals adopted in the *General Management Plan*. Management zone limits would continue to provide the park with a management strategy to regulate the dispersion of use across management zones, once the visitor capacity goals of the *General Management Plan* have been reached. Park managers would continue to use the visitor capacity goals from the *General Management Plan* for all facility planning purposes and would continue to manage with the intent of reaching those goals.

In addition, the VERP program has the ability to reduce visitation levels below the proposed management zone and annual corridorwide visitation limits. If data collected as a result of monitoring show that the conditions of Outstandingly Remarkable Values and the visitor experience are exceeding set standards, management actions which could include reduced visitation levels, would be taken to reduce visitation levels below the limits proposed in Alternative 4. Park managers would continue to use the visitor capacity goals from the *General Management Plan* for all facility planning purposes and would continue working towards those goals.

General Management Plan Developed Area Plans

The *General Management Plan* (GMP pp. 31-59) contains Developed Area Plans for areas within and adjacent to the river corridor. Development Concepts for areas within the river corridor must comply with the management elements of the Merced River Plan, (boundaries, classifications, protection of ORVs, Section 7 determination process, River Protection Overlay, management zoning, and the park's user capacity management program). In the case of El Portal, the new boundary and zoning plan for this alternative would amend the *General Management Plan*'s development concept for El Portal. To the extent that any Development Concept is less restrictive than the Merced River Plan, the Merced River Plan as revised by this plan controls. Actions adjacent to the river corridor but outside of the river boundary must also protect ORVs.

Table V-5 provides a summary of how this alternative affects the ORVs for each segment of the Merced River corridor.

Table V-5
Effect of Alternative 4 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 4 on the ORVs
MAIN STEM MERCED RIVER SEGMENTS		
1. Wilderness	*Scientific* – These segments of the river corridor constitute a highly significant scientific resource because the watershed is largely within designated Wilderness in Yosemite National Park.	*Scientific* – Alternative 4 would not affect the amount of the watershed that is within designated Wilderness. Alternative 4 would set wilderness management zone limits at levels consistent with the existing trailhead quota system and would use VERP to manage visitor use-related impacts in designated Wilderness. These measures would protect the natural, cultural, and wilderness values and ensure that the river corridor continues to be a scientific resource.
	Scenic – This segment includes views from the river and its banks of the glaciated river canyon, exposed bedrock riverbed, Merced Lake and Washburn Lake, the Bunnell Cascade, the confluence of tributaries, a large concentration of granite domes, and the Clark and Cathedral Ranges.	*Scenic* – Implementation of Alternative 4 would not affect the scenic views of the canyon, the riverbed, cascades, or rock formations from the river and its banks.
	Geologic Processes/Conditions – This segment traverses a U-shaped, glacially carved canyon separated by cascades and soda springs below Washburn Lake.	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 4.
	Recreation – This segment provides outstanding opportunities for solitude along the river, with primitive and unconfined recreation. There is a spectrum of levels of recreational use. River-related recreational opportunities include day hiking, backpacking, horseback riding and packing, camping, and enjoyment of natural river sounds. Untrailed tributaries provide enhanced opportunities for solitude.	*Recreation* – Under Alternative 4, visitor use of wilderness areas would continue to be managed under management zone limits set consistent with the existing trailhead quota levels, and would implement VERP. VERP would protect the opportunities for solitude by tracking visitor encounters and taking management actions to reduce encounters, as needed. River-related recreational opportunities would continue to be available to wilderness visitors. Visitors would continue to have access to a spectrum of recreation opportunities.
	Biological – This segment includes a nearly full range of intact Sierran riverine environments; high-quality riparian, meadow, and aquatic habitats (such as the meadow at Washburn Lake), and special-status species such as mountain yellow-legged frog.	*Biological* – Under Alternative 4, visitor use of wilderness areas would be managed under management zone limits set consistent with existing wilderness management programs (trailhead quotas, WIMS, etc.) and through VERP. Implementation of these measures would protect the biological resources from visitor use-related impacts.
	Cultural – This segment includes portions of a prehistoric trans-Sierra route in use for thousands of years and many prehistoric sites. There are many historic resources such as homestead sites, trails, river crossings, High Sierra Camp sites, and structures.	*Cultural* – Under Alternative 4, visitor use of wilderness areas would be managed under management zone limits set at existing trailhead quota system levels and through VERP. Implementation of these measures would protect cultural resources from visitor use-related impacts.
	Hydrologic Processes – The segment is characterized by a free-flowing river and excellent water quality. The river gradient drops from 13,000 to 6,000 feet in elevation. There are examples of natural conditions, including glacial remnants, a logjam in Little Yosemite Valley that is hundreds of years old, and numerous cascades.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character, its gradient, glacial remnants or cascades. Water quality in wilderness areas would be protected under Alternative 4 through management zone limits on visitor use and through implementation of VERP with monitoring of water quality conditions and management action taken as needed to address any adverse change in conditions.
Main Stem-Wilderness Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Wilderness segment by managing development or uses in wilderness areas that would adversely affect the segment's ORVs.

Table V-5
Effect of Alternative 4 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 4 on the ORVs
2 Yosemite Valley	*Scenic* This segment provides magnificent views from the river and its banks of waterfalls (Nevada, Vernal, Illilouette, Yosemite, Sentinel, Ribbon, Bridalveil, and Silver Strand), rock cliffs (Half Dome, North Dome/Washington Column, Glacier Point, Yosemite Point/Lost Arrow Spire, Sentinel Rock, Three Brothers, Cathedral Rock, and El Capitan), and meadows (Stoneman, Ahwahnee, Cook's, Sentinel, Leidig, El Capitan, and Bridalveil). There is a scenic interface of river, rock, meadow, and forest throughout the segment.	*Scenic* – Implementation of Alternative 4 would not affect the scenic views of waterfalls and rock cliffs from the river and its banks. Implementation of Alternative 4 would protect and enhance the scenic views of meadows through management zone limits limiting visitor use in the Valley and implementation of management actions under VERP, as needed, to address visitor-related impacts in meadows.
	Geologic Processes/Conditions – This segment contains a classic, glaciated, U-shaped valley, providing important examples of a mature meandering river; hanging valleys such as Yosemite and Bridalveil Creeks; and evidence of glaciation (e.g., moraines below El Capitan and Bridalveil Meadows).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 4.
	Recreation – This segment offers opportunities to experience a spectrum of river-related recreational activities, from nature study and sightseeing to hiking. Yosemite Valley is one of the premier outdoor recreation areas in the world.	*Recreation* – Implementation of Alternative 4 would protect and enhance recreation in the Valley by managing visitor use levels through management zone limits, and management actions taken under VERP, as needed, to address visitor experience conditions. Visitors would continue to have access to a spectrum of river-related recreational opportunities.
	Biological – Riparian areas and low-elevation meadows are the most productive communities in Yosemite Valley. The high quality and large extent of riparian, wetland, and other riverine areas provide rich habitat for a diversity of river-related species, including special-status species, neotropical migrant songbirds, and numerous bat species	*Biological* – Implementation of Alternative 4 would protect and enhance low-elevation meadows, wetlands, riparian areas, and other riverine areas through management of visitor use levels through management zone limits and implementation of management actions under VERP, as needed, to address visitor-related impacts in sensitive areas.
	Cultural – This segment contains evidence of thousands of years of human occupation reflected in a large number of archeological sites and continuing traditional use today. Nationally significant historic resources are found here, such as designed landscapes and developed areas, historic buildings, and circulation systems (trails, roads, and bridges) that provide visitor access to the sublime views of natural features that are culturally valuable.	*Cultural* – Implementation of Alternative 4 would protect and enhance cultural resources through management of visitor use levels through management zone limits, and implementation of management actions under VERP, as needed, to address visitor-related impacts on cultural resources.
	Hydrologic Processes – This segment is characterized by a meandering river, world-renowned waterfalls, an active flood regime, oxbows, unique wetlands, and fluvial processes.	*Hydrologic Processes* – Visitor use would not affect the Valley's spectacular waterfalls or the river's meandering character, flood regime, or fluvial processes. Implementation of Alternative 4 would protect and enhance wetlands through management of visitor use levels through management zone limits and implementation of management actions under VERP, as needed, to address visitor-related impacts on wetland areas.
Yosemite Valley Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Yosemite Valley segment by managing development or uses that would adversely affect the segment's ORVs.
3 Gorge[a]	*Scenic* This segment provides views from the river and its banks of the Cascades, spectacular rapids among giant boulders, Wildcat Fall, Tamarack Creek Fall, the Rostrum, and Elephant Rock	*Scenic* – Implementation of Alternative 4 would not affect the scenic views of the Cascades, rapids, waterfalls, or rock formations from the river and its banks.
	Geologic Processes/Conditions – This segment is characterized by a classic V-shaped river gorge with a continuous steep gradient.	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts and would not be affected by Alternative 4

Table V-5
Effect of Alternative 4 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 4 on the ORVs
	Recreation – This segment provides a spectrum of river-related recreational opportunities, such as picnicking, fishing, photography, and sightseeing.	*Recreation* – Implementation of Alternative 4 would protect and enhance recreation in the Gorge by managing visitor use levels through management zone limits and implementing management actions under VERP, as needed, to address visitor experience conditions. Visitors would continue to have access to a spectrum of river-related recreational opportunities.
	Biological – This segment is characterized by diverse riparian areas and associated special-status species that are largely intact and almost entirely undisturbed by humans.	*Biological* – Implementation of Alternative 4 would protect and enhance the diverse riparian areas and their associated special-status species by managing visitor use levels through management zone limits and implementing specific management actions under VERP, as needed, to address visitor-related impacts on riparian areas and related species
	Cultural – This segment contains cultural resources, including prehistoric sites and historic sites and structures such as those relating to historic engineering projects.	*Cultural* – Implementation of Alternative 4 would protect and enhance cultural resources by managing visitor use levels through management zone limits, and by implementing management actions under VERP, as needed, to address visitor-related impacts.
	Hydrologic Processes – This segment is characterized by exceptionally steep gradients (2,000-foot elevation drop in approximately 6 miles).	*Hydrologic Processes* – These hydrologic processes are not sensitive to visitor use impacts and would not be affected by Alternative 4.
Gorge Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Gorge segment by managing development or uses that would adversely affect the segment's ORVs.
4. El Portal	*Geologic Processes/Conditions* – This segment contains a transition from igneous to metasedimentary rocks (metasedimentary rocks are among the oldest in the Sierra Nevada).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, or to the proposed corridor boundary and management zoning for El Portal, and would not be affected by Alternative 4.
	Recreation – This segment provides a range of river-related recreational opportunities, in particular whitewater rafting and kayaking (class III to V) and fishing.	*Recreation* – Implementation of Alternative 4 would protect and enhance recreation in El Portal through adoption of management zone limits to manage visitor use levels in El Portal and implementation of specific management actions, as needed, to address visitor experience conditions. The proposed El Portal boundary and the management zoning proposed would not affect access to the spectrum of recreational opportunities.
	Biological – This segment contains riverine habitats such as riparian woodlands and associated federal and state special-status species, including Tompkin's sedge and Valley elderberry longhorn beetle and its critical habitat (elderberry shrub) Expanses of north-facing habitat allow unlimited access to the riparian zone for wildlife species	*Biological* – Implementation of Alternative 4 would protect and enhance these biological resources through adoption of management zone limits to manage use levels in El Portal, implementation of specific management actions taken under VERP, as needed, to address user-related impacts, and implementation of the proposed boundary and zoning.
	Cultural - This segment contains some of the oldest archeological sites in the Yosemite area, as well as many historic Indian villages and traditional gathering places River-related historic resources include structures related to early tourism and industrial development	*Cultural* -- Implementation of Alternative 4 would protect and enhance cultural resources through implementation of a boundary that incorporates cultural resources within a quarter-mile of the river. In addition, use of management zone limits to manage visitor use levels, and implementation of management actions under VERP, as needed, to address visitor-related impacts, would protect and enhance cultural resources
	Hydrologic Processes This segment is characterized by seasonally continuous rapids	*Hydrologic Processes* - These hydrologic processes are not sensitive to visitor use impacts, and would not be affected by Alternative 4

Table V-5
Effect of Alternative 4 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 4 on the ORVs
El Portal Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the El Portal segment by managing development or uses that would adversely affect the segment's ORVs.
	SOUTH FORK MERCED RIVER SEGMENTS	
5 Wilderness	*Scientific* – These segments of the river corridor constitute a highly significant scientific resource because the watershed is largely within designated Wilderness in Yosemite National Park.	*Scientific* – Alternative 4 would not affect the amount of the watershed that is within designated Wilderness. Alternative 4 would implement management zone limits set at existing wilderness trailhead quota levels, along with implementation of VERP, to manage visitor use in designated Wilderness. This would protect the natural, cultural, and wilderness values and ensure that the river corridor continues to be a scientific resource.
	Scenic – This segment provides views from the river and its banks of unique river features, including large pothole pools within slickrock cascades, old growth forest, and meadows.	*Scenic* – Implementation of Alternative 4 would not affect the scenic views of pothole pools within slickrock cascades or old growth forest. Under Alternative 4, management zone limits would limit visitor use of wilderness areas based on existing wilderness trailhead quotas and through VERP. Implementation of these measures would protect meadows and other sensitive areas from visitor use-related impacts.
	Geologic Processes/Conditions – This segment is characterized by glaciated valleys in the high country and V-shaped canyons above Wawona. Moraine meadows and soda springs above Gravelly Ford are also unique, river-related geologic features.	*Geologic Processes/Conditions* – Most of these geologic processes and conditions are not sensitive to visitor use impacts and would not be affected by Alternative 4. Under Alternative 4, management zone limits would limits visitor use of wilderness areas based on existing trailhead quotas and through VERP. Implementation of these measures would protect meadows and other sensitive areas from visitor use-related impacts.
	Recreation – This segment provides outstanding opportunities for river-related solitude, enjoyment of natural river sounds, and primitive and unconfined recreation This segment of the river is predominantly without trails, with the exception of four bridgeless trail crossings in the upper reaches of the segment.	*Recreation* – Under Alternative 4, visitor use of wilderness areas would be managed under management zone limits set at existing trailhead quota system levels, along with VERP. VERP would protect the opportunities for solitude by tracking visitor encounters and taking management actions to reduce encounters, as needed. Visitors would continue to have access to outstanding opportunities for river-related recreation.
	Biological – This segment includes a nearly full range of riverine environments typical of the Sierra Nevada. Examples of river-related federal and state special-status species include Wawona riffle beetle and mountain yellow-legged frog.	*Biological* – Under Alternative 4, visitor use of wilderness areas would be managed under management zone limits set at existing wilderness trailhead quota levels and through VERP. Implementation of these measures would protect the riverine communities and special-status species from visitor use-related impacts.
	Cultural – This segment includes river-related prehistoric sites and resources and reflects historic stock use and cavalry activities.	*Cultural* – Under Alternative 4, visitor use of wilderness areas would be managed under management zone limits set at existing wilderness trailhead quota limits and through VERP. Implementation of these measures would protect cultural resources from visitor use-related impacts.

Table V-5
Effect of Alternative 4 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 4 on the ORVs
	Hydrologic Processes – This segment is characterized by a free-flowing river and excellent water quality.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character. Water quality in wilderness areas would be protected under Alternative 4 through management zone limits that are based on existing trailhead quotas and that limit visitor use in wilderness. In addition, VERP would include monitoring of water quality conditions and management action taken as needed to address any adverse change in conditions.
South Fork-Wilderness Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the South Fork Wilderness segment by managing development or uses that would adversely affect the segment's ORVs.
6. Impoundment[b]	*Scenic* – This segment provides views from the river and its banks of the river and Wawona Dome.	*Scenic* – Implementation of Alternative 4 would not affect the scenic views of the river or Wawona Dome.
	Hydrologic Processes – This segment has excellent water quality.	*Hydrologic Processes* – Water quality would be protected under Alternative 4 through implementation of management zone limits and VERP, which would include monitoring of water quality conditions and management action taken as needed to address any adverse change in conditions.
Impoundment Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Impoundment segment by managing development or uses that would adversely affect the segment's ORVs.
7. Wawona	*Scenic* – This segment provides views from the river and its banks of Wawona Dome.	*Scenic* – Implementation of Alternative 4 would not affect the scenic views of the river or Wawona Dome.
	Recreation – This segment offers opportunities to experience a spectrum of river-related recreational activities, from nature study and photography to hiking.	*Recreation* – Implementation of Alternative 4 would protect and enhance recreation in Wawona through adoption of management zone limits to limit visitor use and implementation of management actions under VERP, as needed, to address visitor experience conditions. Visitors would continue to have access to a spectrum of recreational opportunities.
	Biological – This segment contains a diversity of river-related species, wetlands, and riparian habitats. There are federal and state special-status species in this segment, including the Wawona riffle beetle.	*Biological* – Implementation of Alternative 4 would protect and enhance wetlands, riparian habitats, and special-status species through adoption of management zone limits to limit visitor use levels and management actions taken under VERP, as needed, to address visitor-related impacts to sensitive vegetation or species.
	Cultural – This segment contains evidence of thousands of years of human occupation, including numerous prehistoric and historic Indian villages, historic sites, structures, and landscape features related to tourism, early Army and National Park Service administration, and homesteading.	*Cultural* – Implementation of Alternative 4 would protect and enhance cultural resources through adoption of management zone limits to limit visitor use levels and implementation of management actions under VERP, as needed, to address visitor-related impacts on cultural resources.

Table V-5
Effect of Alternative 4 on the ORVs of the Merced River

Segment Number and Name	ORVs (by category)	Effect of Alternative 4 on the ORVs
Wawona Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Wawona segment by managing development or uses that would adversely affect the segment's ORVs.
8 Below Wawona	*Scenic* – This segment provides views from the river and its banks of continual whitewater cascades in the deep and narrow river canyon in a untrailed, undisturbed environment.	*Scenic* – Implementation of Alternative 4 would not affect the scenic views of whitewater cascades or untrailed, undisturbed environment.
	Geologic Processes/Conditions – This segment contains a transition from Paleozoic Era igneous to Cretaceous Period metasedimentary rocks (metasedimentary rocks are among the oldest in the Sierra Nevada).	*Geologic Processes/Conditions* – These geologic processes and conditions are not sensitive to visitor use impacts, and would not be affected by Alternative 4.
	Recreation – This segment provides outstanding opportunities for river-related solitude, enjoyment of natural river sounds, and primitive and unconfined recreation in an untrailed, undisturbed environment. River-related recreational opportunities include hiking, fishing, and whitewater kayaking.	*Recreation* – Implementation of Alternative 4 would protect and enhance recreation through adoption of management zone limits to limit visitor use levels, and implementation of management actions under VERP, as needed, to address visitor experience conditions. Visitors would continue to have access to outstanding river-related recreational opportunities.
	Biological – This segment is characterized by diverse riparian areas that are intact and largely undisturbed by humans. River-related federal and state special-status species in this segment include the Wawona riffle beetle.	*Biological* – Implementation of Alternative 4 would protect riparian areas and special-status species through adoption of management zone limits to limit visitor use levels, and implementation of management actions under VERP, as needed, to address visitor-related impacts in sensitive areas.
	Cultural – This segment contains archeological sites and historic resources such as trail segments representing early cavalry activity.	*Cultural* – Implementation of Alternative 4 would protect and enhance cultural resources through adoption of management zone limits to limit visitor use levels and implementation of management actions under VERP, as needed, to address visitor-related impacts on cultural resources.
	Hydrologic Processes – This segment is characterized by a free-flowing river with continual whitewater cascades.	*Hydrologic Processes* – Visitor use would not affect the river's free-flowing character and whitewater cascades.
Below Wawona-Summary		The use of existing user capacity measures, along with the other elements of the Merced River Plan (classifications, boundaries, ORVs, management zoning, the River Protection Overlay, VERP, and the Section 7 determination process) would result in protection of the ORVs of the Below Wawona segment by managing development or uses that would adversely affect the segment's ORVs.

NOTES

[a] The Cascades Diversion Dam was removed in 2004. The segment that was formerly designated as 3a has been combined with the segment formally designated 3b and this entire area forms segment 3.

[b] The Impoundment would become part of segment 7, Wawona, if an alternative water source for the area was secured and the impoundment was removed.

Chapter VI

Consultation and Coordination

Chapter VI: Consultation and Coordination

Consultation

Scoping History

The National Park Service published a notice of intent to prepare an environmental impact statement on the Revised Merced River Plan/SEIS in the *Federal Register* on July 27, 2004. A series of public scoping meetings were held in mid-August in Oakland, Mariposa, Yosemite Valley, and El Portal, California. In response to public comment, the public scoping period was extended by two weeks and closed on September 10, 2004. All scoping comment letters, as well as a scoping report, are available for viewing on the park's web site *(www.nps.gov/yose/planning/mrp/revision).*

Public Review of Revised Merced River Plan/SEIS

The *Draft Merced Wild and Scenic River Revised Comprehensive Management Plan and Supplemental Environmental Impact Statement* was released for public review in January 2005. The Notice of Availability was published in the *Federal Register* on January 14, 2005 and the official review period continued through March 22, 2005. The National Park Service contacted local, regional, and national media outlets, issued press releases that were faxed and emailed to media outlets, and phone calls were made to newspaper and news reporters to generate interest in the plan. In addition, paid newspaper advertisements were placed in the Mariposa Gazette, the Sierra Star (Oakhurst, CA), the Union Democrat (Sonora, CA), the Merced Sun-Star, and the Mammoth Times. Paid public notices were placed in the San Francisco Chronicle, the L.A. Times, the Sacramento Bee, and the Fresno Bee. Numerous stories about the plan and the schedule of public meetings appeared in local and regional newspapers. In addition, the National Park Service posted several project fact sheets on the park's web site, posted fliers on community bulletin boards, post offices, and local businesses in communities where public meetings were hosted, and posted press release announcements in the park's Daily Report throughout the entire comment period on the plan. In addition, the planning update newsletter was mailed to over 8,000 subscribers, and notices regarding the plan were emailed via Yosemite's Electronic Newsletter to over 4,500 subscribers.

A series of public meetings were held throughout California in February and March 2005 to discuss the draft document. In addition to public testimony received at the public meetings, 147 comment letters were received during the public review period. The public comments received and transcripts from the public hearings are available for viewing on the park web site listed above. Public comments and responses for this project are included in Appendix F, Summary of Public Comments and Responses.

During the public comment period on the Draft SEIS, the National Park Service hosted eleven public meetings between February 22, 2005 and March 7, 2005 across California in Yosemite Valley, El Portal, San Francisco, Burbank, Oakhurst, Mammoth Lakes, Sacramento, Fresno, Merced, Mariposa, and Groveland. An additional National Park Service Open House was hosted in Yosemite Valley prior to the end of the public comment period.

Each public meeting was set up to allow for informal conversations between park staff (including consultants) and the public to discuss elements of the revised plan. The second portion of these public meetings was dedicated to a presentation by park staff on the plan, followed by formal public hearing recorded by a court reporter. Participants could address their comments on the plan either to members of Yosemite National Park's Management Team and the audience, or in a private session with the court reporter. Following the public hearing, open dialogue continued between the public and park staff in group or individual settings.

During the official comment period, the public was encouraged to submit written comments on the Draft Revised Merced River Plan/SEIS via letter, email, or fax. Written comments were also accepted at all public meetings.

The National Park Service specifically initiated dialogue with several interested local parties. These included National Park Service employees and their families, Delaware North Companies Parks and Resorts at Yosemite (primary concessioner) employees and residents, and park partner staff such as the Yosemite Institute, the Yosemite Association, and The Yosemite Fund. In addition, the National Park Service did extensive outreach within the local communities of El Portal and Wawona through participation at local Mariposa County Planning Town Advisory Committee meetings. The National Park Service also conducted a "walking tour" in El Portal to discuss the process for identifying Outstandingly Remarkable Values within the El Portal segment of the Merced River and the rationale for the various El Portal boundary alternatives. The National Park Service engaged Gateway communities throughout the process through personal communications and meetings between the park staff and gateway community members.

Results of Draft Review Comments

As a result of the public comment period, the park received comments from 114 individuals, 25 organizations, 6 government agencies, 2 tribes and 1 university, including public testimony given by individuals at public meetings. A total of over 900 separate comments were received. The analysis of these comments generated about 400 general concern statements, which were categorized and considered for incorporation in the planning process. Some of the main concerns raised during the public comment period and addressed in this Final Merced River Plan/SEIS include the following:

- The relationship between the *General Management Plan* and the Merced River Plan in the context of proposed user capacity limits.
- The process for ensuring that the *Yosemite Valley Plan* and projects associated with it are reviewed for compliance with this Revised Merced River Plan/SEIS.
- The relationship between existing elements of Yosemite National Park's User Capacity Management Program, proposed visitor limits, and the Visitor Experience and Resource Protection component.
- Criteria used for the selection of Visitor Experience and Resource Protection indicators and standards and suggestions for additional indicators and standards.
- Clarification of what types of management actions would be implemented associated with the Visitor Experience and Resource Protection and what management actions would require further National Environmental Policy Act review and public involvement.
- Clarification on how visitor use limits would be implemented.
- Clarification regarding the interim facility limits and how the park would make a determination on maintaining or removing these limits.

- Concerns from culturally associated American Indian groups relating to continued access within the river corridor for traditional practices, as well as protection and enhancement of important natural and cultural resources within the entire corridor.

- Concerns from residents in local communities and American Indian groups regarding management zoning prescriptions that allow for placement of administrative facilities within El Portal and Wawona.

- Specific and general desires relating to management of Yosemite National Park's natural, cultural, physical, and social resources.

- Concerns regarding the complexity of the document and the user capacity program in particular.

The issues and concerns not addressed in this document include the desire to have the Revised Merced River Plan/SEIS address all elements of the existing Merced River Plan, the desire to have the document address specific projects, such as the types of campgrounds or road realignments, the desire for the National Park Service to commit to a day use reservation system or other specific management actions in this document, and support or opposition of numerous specific activities or park implementation projects. All comments received during the comment period have been duly considered and are now part of the administrative record for this project.

Comment Analysis and Response Process

Public comments received during the public comment period were reviewed and analyzed using the park's Comment Analysis and Response Database system. Analysis of public comment letters is comprised of a series of stages which require review by staff and members of the Management Team during review and processing. For example, each letter received is read to determine the discrete points the author is expressing. Each discrete sentence or paragraph is then "coded" in order to associate that "comment" with a particular resource topic or element of the plan (such as air quality or the plan's relationship to other projects).

Once all letters have been coded for individual comments, similar comments are grouped together and a "concern statement" is generated, which is intended to capture the main points of what the comments are addressing. Concern statements are worded in a way that affords the National Park Service the opportunity to respond to a requested action. Concern statements are then screened to determine whether or not further clarification needs to be made in the document or whether they call for a modification of the proposed action. In the case of the later, these types of concerns would be brought to park management for deliberation. Finally, the planning team prepares responses presenting the National Park Service's reasoning as to how and why public concerns will be incorporated into the planning process.

As a direct result of public input, all comments are made available for review on the park's web site. The posting of public comments is a result of requests made during the scoping process for this planning effort, and will continue for future planning efforts. The Summary of Public Comments and Responses generated through the comment analysis and response process is included as Appendix F.

Coordination

U.S. Fish and Wildlife Service

The Endangered Species Act, as amended (16 USC 1531 *et seq.*) requires all federal land agencies to consult with the U.S. Fish and Wildlife Service to ensure that any action authorized, funded or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. The National Park Service initiated consultation with the U.S. Fish and Wildlife Service in August 2004. The species list for special-status species to be evaluated for this project was obtained from: http://sacramento.fws.gov/es/ssp_lists/auto_list_form.cfm on October 6, 2004 and was used as the basis for special-status analysis in this environmental assessment (see Appendix D, Special-Status Species Considered in this Analysis). Consultation with the U.S. Fish and Wildlife Service will continue, as defined by Section 7 of the Endangered Species Act, as environmental compliance for the Final Revised Merced River Plan/SEIS is finalized.

California State Historic Preservation Officer

A Programmatic Agreement among the National Park Service at Yosemite, the California State Preservation Officer, and the Advisory Council on Historic Preservation Regarding Planning, Design, Construction, Operation, and Maintenance (NPS 1999w) was developed in consultation with American Indian groups having cultural association with Yosemite National Park, and was executed in October 1999. Pursuant to Article VI of this Programmatic Agreement, the review process for Section 106 of the National Historic Preservation Act of 1966, as amended, is being conducted in conjunction with this National Environmental Policy Act review process. The National Park Service initiated consultation with the California State Historic Preservation Officer on September 29, 2004, regarding the development of the Draft Revised Merced River Plan/SEIS. On January 21, 2005 a letter was sent to the State Historic Preservation Officer, the Advisory Council on Historic Preservation and the National Trust for Historic Preservation requesting for review and comments on the Draft Revised Merced River Plan/SEIS to be provided to the park by March 22, 2005. No comments were received from the three agencies.

U.S. Forest Service

National Park Service-administered lands are bounded by U.S. Forest Service lands to the north, south, and west of the El Portal Administrative Site, and the U.S. Forest Service administers the Merced Wild and Scenic River corridor to the west of the El Portal Administrative Site. The National Park Service initiated consultation with the U.S. Forest Service (Sierra and Stanislaus National Forests) regarding the Draft Revised Merced River Plan/SEIS in September 2004. The National Park Service and the U.S. Forest Service will coordinate their planning efforts on the Merced Wild and Scenic River, particularly in areas where the agencies jurisdictions meet. Although the U.S. Forest Service's Merced River corridor boundary currently ends at the western end of the El Portal Administrative Site, the U.S. Forest Service has indicated that additional areas under its jurisdiction between the El Portal Administrative Site's western boundary and its eastern boundary at the Yosemite National Park boundary are likely to be included in the U.S. Forest Service Merced River corridor boundary in the next revision to their Merced River management plan (NPS 2004h).

California Department of Transportation

The National Park Service initiated consultation with the California Department of Transportation (CalTrans) in order to discuss rights-of-way within the Merced River corridor.

Sections of Highway 140 in the El Portal Administrative Site are either owned, leased, or maintained by CalTrans. The National Park Service has been in direct contact with CalTrans' survey and right-of-way departments. Consultation is currently ongoing.

Bureau of Land Management

An interagency agreement between the National Park Service, the U.S. Forest Service, and the Bureau of Land Management guides the policies and procedures for commercial whitewater river rafting within the Merced Wild and Scenic River corridor. According to the agreement, the Bureau of Land Management's Folsom Resource Area District is responsible for the permitting and regulation of commercial river guide companies who use the Red Bud Launch Site (at the west end of the El Portal Administrative Site). A dialogue was initiated with the Bureau of Land Management regarding the Draft Revised Merced River Plan/SEIS (NPS 2004i and 2004j). It is expected that the Bureau of Land Management will continue to manage whitewater river rafting on the river west of the El Portal Administrative Site under the existing permitting regulations. Any management actions dealing with use of the Red Bud Launch Site would be coordinated with the Bureau of Land Management.

American Indian Consultation

National Park Service consultation with American Indian groups occurred throughout the development of the original Merced River Plan. Yosemite National Park continues to consult with American Indian groups having a cultural association with the Merced River corridor, as well as those in the immediate vicinity. Information sharing and project planning has included face-to-face consultation sessions at the All Tribal meeting on August 24, 2004. The All Tribal meeting included the following groups: the American Indian Council of Mariposa County, Inc (AICMC); the Tuolumne Me-wuk Tribal Council; the North Fork Mono Rancheria; the Chukchansi Tribal Government (Yokuts); the Mono Lake Kutzadika; the Bridgeport Paiute Indian Colony; and the Bishop Paiute Tribal Council. The Draft Revised Merced River Plan/SEIS was mailed by Certified Mail Return Receipt Requested on January 21, 2005, to the same tribes. Telephone follow-up with an offer to provide a face-to-face presentation similar to the public outreach occurred on February 15, 2005. Face-to-face consultation with a presentation to the AICMC occurred on January 27, 2005, and with the Tuolumne Band of Me-Wuk on January 25, 2005. Consultation and partnering will continue with the American Indian groups throughout the completion of the Revised Merced River Plan/SEIS.

Gateway Communities

Park management has coordinated with local communities through a series of presentations to local governments and civic organizations. All organizations requesting such presentations were accommodated.

List of Agencies, Organizations, and Businesses that Received the Revised Merced River Plan/SEIS

The names of individuals who received the document are available upon request.

Federal Agencies

- Advisory Council on Historic Preservation
- Public Health Service
- Department of the Interior:
  - Bureau of Land Management, Folsom, California Office
  - Bureau of Reclamation, Sacramento Office
  - National Park Service:
    - Air Resources Division
    - Alaska Regional Office
    - Denver Service Center
    - Geologic Resources Division
    - Intermountain Regional Support Office
    - Pacific West Regional Office
    - Water Resources Division
    - National Parks:
      - Big Cypress National Park
      - Canyonlands National Park
      - Channel Islands National Park
      - Crater Lake National Park
      - Death Valley National Park
      - Everglades National Park
      - Flagstaff Area National Monuments
      - Golden Gates National Recreation Area
      - Joshua Tree National Park
      - Lake Mead National Recreation Area
      - Lassen Volcanic National Park
      - Mount Rainier National Park
      - Point Reyes National Seashore
      - Sequoia and Kings National Parks
- U.S. Army Corp of Engineers
- U.S. Department of Agriculture, Forest Service:
  - Angeles National Forest
  - Boise Interagency Fire Center
  - Coconino National Forest
  - Humboldt National Forest
  - Lassen National Forest
  - Inyo National Forest
  - Missoula Fire Science Lab
  - Pacific Southwest Forest and Range Experiment Station
  - Sierra National Forest
  - Stanislaus National Forest
  - Tahoe National Forest
  - Toiyabe National Forest
- U.S. Department of Health and Human Services
- U.S. Department of Insurance Office, Environmental Policy and Compliance
- U.S. Department of Justice
- U.S. Department of Transportation, Federal Highway Administration, Sacramento
- U.S. Environmental Protection Agency, San Francisco Regional Office
- U.S. Fish and Wildlife Service, Sacramento Regional Office
- U.S. Geological Survey, Menlo Park, California Office
- U.S. Postal Service, Yosemite National Park

United States Representatives

- Senator Barbara Boxer
- Senator Diane Feinstein
- Congressman George Radanovich
- Congressman John T. Doolittle
- Congressman James Hansen
- Congressman John Kasich
- Congressman Ralph Regula
- Congressman George Miller
- Congressman Mark Souder

State Agencies

- American Indian Heritage Commission
- California Department of Fire
- California Department of Fish and Game
- California Department of Justice, Attorney General
- California Office of Historic Preservation
- California Department of Parks and Recreation
- California Office of Planning and Research, State Clearing House
- California Department of Transportation
- California Regional Water Quality Control Board
- Department of Forestry
- Resources Agency of California

American Indian Tribes

- American Indian Council Mariposa County Inc (a.k.a. Southern Sierra Miwuk Nation)
- Bishop Paiute Indian Colony
- Coarsegold Chuckchansi
- Mono Lake Kutzadika Paiute Indian Community

Mono County Bridgeport Paiute Indian Colony

North Fork Mono Indian Museum

North Fork Mono Rancheria

Tuolumne Me-wuk Rancheria

County and Local Governments

Fresno County:
- Board of Supervisors
- Chamber of Commerce
- Planning and Resource Management

Inyo County:
- Planning Department

Madera County:
- Board of Supervisors
- Oakhurst Chamber of Commerce
- Planning Director

Mariposa County:
- Air Pollution Control District
- Board of Supervisors
- Chamber of Commerce
- Department of Public Works
- Environmental Health Department
- Planning Department
- Sheriff
- Unified School District

Merced County:
- Association of Governments
- Planning Commission
- Planning Department
- Visitor Bureau

Mono County:
- Board of Supervisors
- Mammoth Lakes Chamber of Commerce
- Mammoth Lakes Visitor Bureau
- Mono Lake Visitor Center
- Planning Department

San Francisco County:
- Planning Department
- Public Utilities, Hetch Hetchy Water and Power

Stanislaus County:
- Council of Government
- Environmental Review Committee
- Planning Department

Tuolumne County:
- Air Pollution Control District
- Alliance for Resources and Environment
- Board of Supervisors
- Chamber of Commerce
- Community Development
- Department of Public Works
- Planning Commission
- Sheriff
- Visitor Bureau- Groveland

Organizations and Businesses

Access Fund

American Disability Act Compliance Service

All Seasons Groveland Inn

American Alpine Club

American Hiking Society

American Whitewater

Automobile Club of Southern California

Backcountry Horsemen of California

Ballard Spahr Andrews & Ingersoll

Bell Sports

Bettencourt & Associates

Biophilia Society

Brecher & Volker

Brooks Institute of Photography

Calabasas Historical Society

California Bus Association

California Cycle Magazine

California Preservation Foundation

California State Horsemen's Association

California Trout

California Wilderness Coalition

Care-ousel Therapeutic Riding

Central Coast Studios

Central Sierra Audubon Society

Comfort Inn

Cycle California

Dames & Moore

David Evans & Associates, Inc.

Delaware North Companies Parks and Resorts

Denali Productions, Studio One

Destination America, Inc

Destination Villages

Dornbusch & Co.

Drewe & Associates

Earth First, Santa Cruz

Earth Island Institute

East Bay Bicycle Coalition

El Portal Homeowners Association

El Portal Market

El Portal Town Planning Advisory Committee

Environmental Defense Fund

Environment Now

Environmental Science Associates

Fish Camp Advisory Council

Fish Camp Property Owners Association

Friends of the Earth

Friends of the Forest
Friends of the River
Friends of Yosemite
Future Forestry Products
Geographic Expeditions
Gill Associates
Global Environmental
Gold River Discovery Center
Greystone
Griffith & Farrace
Groveland Yosemite Gateway Museum
Halff Associates, Inc.
Havans Foundation
Heritage Trails
High Sierra Hikers Association
Highway 120 Association
Historic Trails Council
Jakes Associates
Law Office of J Wallace Oman
Law Office of Mark A. Kanai
Law Offices of Michael Wainman
Mammoth Mountain Ski Area
Manitoba Conservation
Margen & Associates
Marin Mammal Center
Mariposa County Visitors Bureau
Mariposa Horse Association
Mariposans for Environmentally Responsible Growth
MorComm Press
Mountain Defense League
National Parks and Conservation Association
National Trust for Historic Preservation, California Office
Southwest and California Region Offices
Natural Resources Defense Council
National Tour Association
Newfields
Northcoast Environmental Center
Nuemiller & Beardslee
Oakhurst Lodge
Ormsby & Thickstun Design
Pacific Bell
Pacific Gas & Electric, Public Affairs
Parmelee Art Company
Pinnacle Economics
Planning and Conservation League
Polar Equipment Incorporation
Provost & Pritchard Engineering Group
Ramada Limited, Oakhurst
Reed Construction Data
Regional Council of Rural Counties
Renewable Technologies Inc.
Royal Robbins Inc.
Salomon Smith Barney
Save-the-Redwoods League
Service Employee International Union, Local 535
Sierra Club:
  Condor Group
  Loma Prieta Chapter
  Miami Group
  National Office
  Tuolumne Group
  Yosemite Committee
Sierra Railroad Company
Sonoma County Horse Council
Sonora Community Hospital
Soroptomist International of Groveland
Sparks Studios
Sunset Magazine
The Ansel Adams Gallery
The Nature Conservancy
The Yosemite Fund
Theroux Environmental
Thurmond Law Offices
Timeless Technologies
Tioga Lodge
Tuolumne River Preservation Trust
Upper Merced River Watershed
Valley View Trail Riders Association
VIA Adventures
Wawona Area Properties Owners Association
Westar Associates
Whalen & Associates Inc
Wild Canid Research Group
The Wilderness Society:
  California/Nevada Region
  National Office
Wilderness Watch
Wimmer Yamada & Caughey
Yosemite Area Audubon

Yosemite Association
Yosemite Bug Hostel
Yosemite Campers Coalition
Yosemite Concession Services
Yosemite Guides
Yosemite Institute
Yosemite Motels
Yosemite Medical Group
Yosemite Pines
Yosemite Restoration Trust
Yosemite Sierra Visitors Bureau
Yosemite Sightseeing Tours
Yosemite West Group

Libraries

Alameda County, Main Brach
Bassett Memorial
Bioscience and Natural Resources Library
California State Library
California State University Fresno, Henry Madden Library
Columbia College Library
Contra Costa County, Concord Branch
Government Documents Library
Government Information, Shields Library
Groveland
Los Angeles City, Central Branch
Marin County, Main Branch
Mariposa, including El Portal Branch
Oakhurst Library
Robert Crown Law Library
Sacramento County, Central Branch
San Bernardino County, Main Branch
San Diego City, Main Branch
San Diego County Law Library
San Francisco City, Main Branch
San Jose City, Berryessa Branch
San Mateo County, Law Library
Sonoma County Library
Sonoma State University, Salazar Library
Santa Cruz County Library
Stanford University, Green Library
Stanislaus County Library
University of California at Berkeley, Bancroft Library
University of California at Berkeley, Main Library
University of California at Davis, Shields Library
University of California at Los Angeles, Maps and Government Information Library
University of California at Los Angeles, University Research Library
University of Minnesota, Forestry Library
United States Department of Insurance Library
Yosemite National Park Research Library

Newspapers

Antelope Valley Press
Associated Press
Bakersfield Californian
Contra Costa Times
Fresno Bee
Los Angeles Times
Mariposa Gazette
Mariposa Tribune
Merced Sun-Star
Mountain Democrat
Oakland Tribune
San Francisco Chronicle
San Francisco Examiner
San Jose Mercury News
Sierra Star
Sonora Union Democrat
Stockton Record
The Modesto Bee
The Sacramento Bee

Radio

KCBS AM – San Francisco
KFBK – Sacramento
KFIV – Modesto
KGO AM – San Francisco
KMJ – Fresno
KMPH – Fresno
KQED – San Francisco
Plus local radio stations

Television

KRON – San Francisco

KTVU – Oakland
KXTV – Sacramento
NBC Network News – Los Angeles

Colleges and Universities

Bakersfield College
California State University, Fresno
California State University, Humboldt
California State University, Long Beach
California State University, Northridge
California State University, Sacramento
California State University, San Diego
California State University, San Jose
California State University, Stanislaus
College of the Atlantic
Cuyamaca California College
Colorado School of Mines
Colorado State University
Consumnes River College
De Anza College of Environmental Studies
Diablo Valley College
Drexel University
East Carolina University
Florida Atlantic University
Fresno Pacific University
Grinnell College
Institute of the Rockies
Johnson State College
Long Beach City College
Modesto Junior College
North Carolina State University
Pasadena City College
San Joaquin Delta College
Slippery Rock University
Stanford University
University of California, Berkeley
University of California, Riverside
University of California, Santa Cruz
University of Florida
University of Minnesota
University of Montana
University of Tennessee
University of Vermont
University of Washington, School of Law
Utah State University
Vassar College
Woodbury University

Chapter VII

List of Preparers

Chapter VII: List of Preparers

Name	Responsibility	Education	Years Experience
National Park Service, Yosemite National Park			
Michael J. Tollefson	Superintendent	B.A. Business Administration (Marketing and Finance)	31 NPS
Kevin Cann	Deputy Superintendent	2 years undergraduate studies, pre-law	24 NPS
Linda Dahl	Planning Program Manager	B.S. City and Regional Planning Graduate work in Environmental Sciences	14 NPS 26 other
Mike Reynolds	Former Planning Program Manager	M.B.A. Business Management B.A. Environmental Studies	19 NPS
Bill Delaney	Division Chief, Project Management	Registered Professional Engineer B.S. Civil Engineering	27 NPS
Dennis Mattiuzzi	Division Chief, Facilities Management	AA Business Administration	4 NPS 32 other
Marty Nielson	Division Chief, Business and Revenue Management	B.S. Outdoor Recreation	16 NPS 8 other
Niki Nicholas	Division Chief, Resources Management and Science	Ph.D. Forestry M.S. Ecology B.A. Biology	3 NPS 18 other
Yosemite National Park Core Team			
Mark Butler	Project Manager	M.P.A. Public Administration B.S. Soils and Water Science	27 NPS 2 other
Amy Schneckenburger	Former Project Manager	M.P.P. Public Policy B.S. Landscape Architecture	20 NPS
Kristina Rylands	Deputy Project Manager	Graduate work in Education B.A. English/Natural History	6 NPS 14 other
Jen Nersesian	Public Outreach	M.P.P. Public Policy B.A. Philosophy	2 NPS 12 other
Sue Clark	Project Assistant	B.S. Plant and Soil Science	24 NPS 5 other
Brandon Flint	Former Project Assistant	B.S. Parks and Recreation Management, minor in Recreation Resource Management	7 NPS
Mitzi Thornley	Project Administration	1 year undergraduate studies	5 NPS 15 other
Yosemite National Park Technical Experts			
Glen Rothell	Project Management	B.S. Renewable Natural Resources	28 NPS
Judi Weaser	Natural Resources, Vegetation and Wetlands	M.S. Community Development B.S. Zoology	16 Public
Carol Knipper	Natural Resources	B.S. Natural Resources Management	21 NPS
Steve Thompson	Ecology and Resources, Wildlife and Special-Status Species	M.S. Ecology – Wildlife B.S. Biology	13 NPS 5 other
Jim Roche	Water Resources, VERP	M.S. Geology B.S. Chemistry	8 NPS 3 other
Jim Tucker	Visitor Protection, Traffic and Parking Management	B.A. Recreation Administration/Outdoor Recreation	30 NPS
Ed Billington	Facilities Maintenance	2 years undergraduate studies	27 NPS
Jeannette Simons	State Historic Preservation Officer, Section 106 Coordination	M.A. Anthropology, emphasis in archeology B.A. Anthropology	10 Public 12 other
Laura Kirn	Cultural Resources	B.S. Anthropology	20 NPS
Laurel Boyer	Wilderness Management	3 years undergraduate studies	32 NPS
Mark Fincher	Wilderness Management	B.A. Geography and Environmental Studies	14 NPS
Paul Laymon	Facilities Management	2 years undergraduate	23 NPS 2 other

Name	Responsibility	Education	Years Experience
Martha Lee	Interpretation	B.A. Art Museum Graduate work in Recreation and Leisure Studies	20 NPS 7 other
Tom Medema	Field Operations Interpretation	B.A. Environmental Education and Recreation M.S. Natural Resource Communication	14 NPS 3 other
Joe Meyer	Resources	B.S. Information and Computer Science Graduate work in Environmental Policy	15 NPS 3 other
National Park Service, Denver Service Center			
Dave Kreger	NEPA Compliance	B.S. Environmental Resource Management	12 NPS 13 other
Kerri Cahill	User Capacity/VERP/Recreation Management	Ph.D. Natural Resource Recreation Management M.S.P. Natural Resource Planning B.A. Environmental Policy	2 NPS 5 other
Other National Park Service Staff			
Jim Hammett	Superintendent, John Day Fossil Beds National Monument	M.S. Vegetation Ecology	32 NPS
Jeff Bradybaugh	Resources Management/Zion National Park	M.S. Wildlife and Range Sciences B.S. Wildlife and Fisheries Science	22 NPS
U.S. Geological Survey			
Jan van Wagtendonk	Forester/User Capacity	Ph.D. Wildland Resources Science M.S. Range Management B.S. Forest Management	6 USGS 22 NPS 9 other
NewFields International, Prime Contractor			
Gary Hayward	Project Manager, Hydrology, Floodplains, and Water Quality	M.S. Marine Science B.A. Geology	25 Private
Maryellen Tuttell	Asst. Project Manager, Visitor Experience, Land Use, Socioeconomics	M.S. Food and Resource Economics B.S. Food and Resource Economics	8 Public 9 Private
Gretchen Stromberg	Cultural Resources, Scenic Resources	M.L.A. Landscape Architecture B.A. Anthropology	4 Public 7 Private
Elexis Mayer	Administrative Record, Comment Analysis, Public Outreach, Park Operations	B.S. Natural Resources Planning	4 Public 2 Private
Leslie Boughton	Public Comment Analysis	M.S. Project Engineering and Management B.S. Chemical Engineering	12 Private
Kristen Shive	Cultural Resources	B.A. Anthropology	3 Public 2 Private
Devon Rothell	Public Comment Analysis	B.A. Cultural Anthropology	6 Private
Environmental Science Associates, Subcontractor			
David Full	Natural Resources Project Director	M.S. Urban Planning B.A. Urban Planning	1 Public 20 Private
Tina Ogawa	Natural Resources Project Manager and Environmental Planner	M.S. Environmental Science, Policy and Management B.A. Economics and Environmental Studies	11 Private
Bill Boynton	Geographic Information Systems	M.A. Geography B.A. Philosophy	10 Private
Martha Lowe	Wetlands and Vegetation	M.A. Ecosystem Restoration and Management B.A. Fine Arts	4 Private
Peter Hudson	Geology, Geohazards, and Soils	B.A. Geology	17 Private
Christine Mueller	Geology, Geohazards, and Soils	M.C.P. Urban Studies and Planning B.A. Earth Sciences and Environmental Studies	7 Private
Christine Gaber	Wildlife and Rare, Threatened and Endangered Species	B.S. Evolution and Ecology	5 Private
Nanette Sartoris	Air Quality and Noise	B.S. Environmental Policy Analysis and Planning	10 Private
Perry Jung	Graphics	B.F.A. Graphics	15 Private

Name	Responsibility	Education	Years Experience
		David Evans Associates, Subcontractor	
Bill Byrne	Transportation	B.S.C.E. Civil Engineering M.S.C.E. Civil Engineering	6 Public 25 Private
Marilyn Kuntemeyer	Transportation	B.S. Civil Engineering M.E. Civil Engineering	7 Public 18 Private
		Technical Specialists	
Dave Lime	User Capacity/Recreation Management	Ph.D. Geography M.S. Geography B.S. Geography	20 Public 14 Private
Robert Manning	User Capacity/Recreation Management	Ph.D. Resource Development M.S. Park and Recreation Resources B.S. Biology	30 Private
Doug Whittaker	User Capacity/Recreation Management	Ph.D. Human Dimensions in Natural Resources M.S. Forest Management B.A. Geography	16 Private
		Individual Subcontractors	
Jill Irwin	Technical Editing and Document Coordination	B.A. Art History Certificate, Technical Writing	12 Private
Loralie Froman	Technical Editing	B.A. Humanities Certificate, Technical Writing	11 Private
Jean Lewis	Technical Editing	B.A. Russian Language and Literature	15 Private
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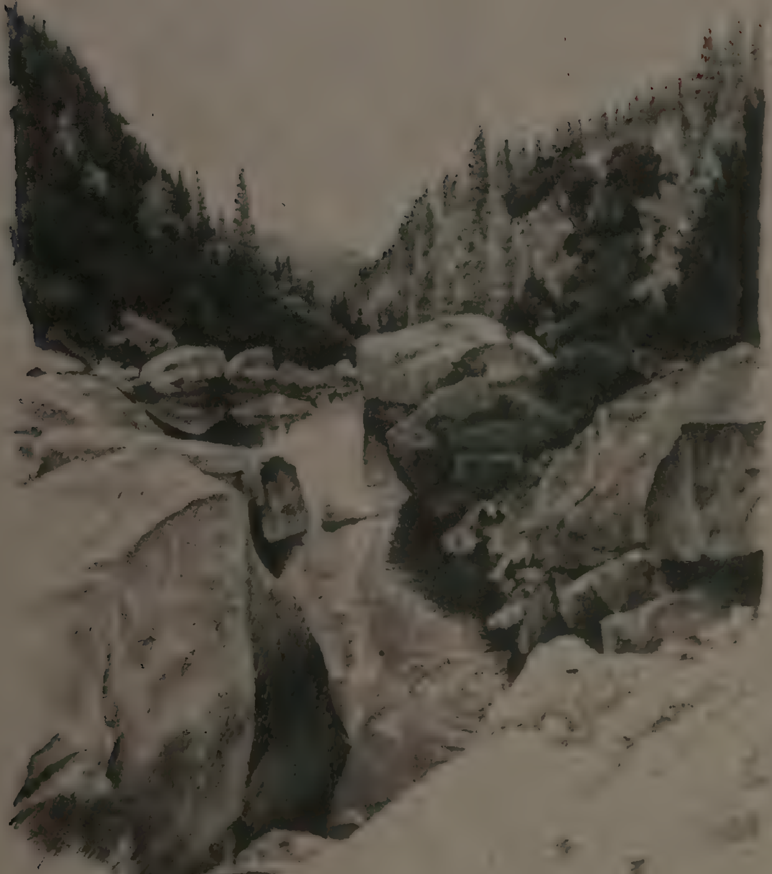
Chapter VIII

Glossary



Chapter VIII: Glossary

Glossary of Terms

100-year floodplain: The area along the river corridor that would receive floodwaters during a 100-year flood event. A 100-year flood event has the probability of occurring 1% of the time during any given year. If a 100-year flood event occurs, the following year will still have the same probability for occurrence of a 100-year event. For the purposes of this plan, the 100-year floodplain also includes wetlands and meadows associated with the hydrologic and ecological processes of the river.

1982 Secretarial Guidelines for Wild and Scenic Rivers: The 1982 Interagency Guidelines on the Wild and Scenic Rivers Act (also referred to as Secretarial Guidelines) provide guidelines on the evaluation, classification, and management of rivers designated as Wild and Scenic within the U.S. Departments of Agriculture and the Interior. The section of the guidelines on management of Wild and Scenic Rivers addresses carrying capacity and public use, as well as development of facilities and other management issues.

A-weighted scale (dBA): Noise intensity as measured with devices that have the same sensitivity to sound frequencies as the human ear.

Adaptive management: A process that allows the development of a plan when some degree of biological and socioeconomic uncertainty exists. It requires a continual learning process, a reiterative evaluation of goals and approaches, and redirection based on an increased information base and changing public expectations.

Affected environment: Existing biological, physical, social, and economic conditions of an area that are subject to change, both directly and indirectly, as a result of a proposed human action.

Alluvial: An adjective referring to alluvium, which are sediments deposited by erosional processes, usually by streams.

Alluvium: A general term for clay, silt, sand, gravel, or similar unconsolidated rock fragments or particles deposited during comparatively recent geologic time by a stream or other body of running water.

Alternatives: Sets of management elements that represent a range of options for how, or whether to proceed with a proposed project. An environmental impact statement, such the one in this Merced River Plan, analyzes the potential environmental and social impacts of the range of alternatives presented.

Annosus root disease: Annosus root disease is a widespread native fungus. In pines, the fungus spreads through the root system, attacking and killing the inner bark and sapwood. Within two to six years after initial infection, the fungus reaches the root crown and girdles the tree. The tree dies, but the fungus remains active as a saprophytic wood-decaying organism within roots and the butt of the dead tree. Pines weakened by annosus root disease are often killed by bark beetles. Incense-cedars, however, are not affected by beetles and will stand green for many years, until the disease finally weakens the structure enough to cause failure. Cedars are thought to act as a reservoir for annosus root disease because they take so long to die.

Annual corridorwide visitation limit: Represents the annual visitation limit for the entire Merced River corridor. The annual limits as proposed in Alternatives 3 and 4 of the Revised Merced River Plan/SEIS have been established to ensure that the daily segment and management zone limits are not reached on the majority of days in a year. Based on information gathered through the VERP program, the proposed annual corridorwide visitation limits can be increased or decreased based on the condition of the Outstandingly Remarkable Values.

Aquifer: A geologic formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Bed and bank: The area below the ordinary high water mark in a river or stream. The ordinary high water mark is defined as the 2.33-year flood by the U.S. Army Corps of Engineers. See also, "stream bank."

Base zone: The zone reflecting the general desired condition for a segment of the river corridor. Localized exceptions to the base zone are indicated by smaller zones within the base zone and are shown on the alternatives maps.

Baseline data: Data collected on a resource or subject that reflects its current status and serves as a basis for future comparison.

Basin: Refers to a drainage basin. A region or area bounded by a drainage divide and occupied by a drainage system. Specifically, an area that gathers water originating as precipitation and contributes it to a particular stream channel or system of channels. Synonym: watershed.

Batholith: Refers to a very large body of plutonic rock. The Sierra Nevada batholith comprises several smaller plutons that represent the repeated intrusions of granitic magma. From the Greek *bathos,* deep, and *lithos*, rock.

Bed: Refers to the relatively flat or level bottom (substrate) of a body of water, as in a lakebed or riverbed.

Best Management Practices: Effective, feasible (including technological, economic, and institutional considerations) conservation practices and land- and water-management measures that avoid or minimize adverse impacts to natural and cultural resources. BMPs may include schedules for activities, prohibitions, maintenance guidelines, and other management practices.

Biodiversity: Biodiversity, or biological diversity, is generally accepted to include genetic diversity within species, species diversity, and a full range of biological community types. The concept is that a landscape is healthy when it includes stable populations of native species that are well distributed across the landscape.

Bog: Peat deposits in areas with a high water table and little to no significant inflow or outflow streams. Bogs support acid-loving vegetation, especially mosses but are generally exceedingly deficient in available plant nutrients.

Boundaries: The areas that receive protection under the Wild and Scenic Rivers Act. Boundaries include an average of not more than 320 acres of land per mile, measured from the ordinary high water mark on both sides of the river.

Categorical Exclusion: As described under the National Environmental Policy Act, these are a category of federal actions that do not individually or cumulatively have a significant effect on the human environment which therefore neither an Environmental Assessment nor an Environmental Impact Statement is required. The Council on Environmental Quality NEPA Regulations gives federal agencies the authority and discretion to determine which of their own activities should be categorically excluded from NEPA. The types of activities that can be categorically excluded vary between agencies. *(The NEPA Handbook)*

CEQ Regulations: The Council on Environmental Quality (CEQ) was established by the National Environmental Policy Act (see NEPA) and given the responsibility for developing federal environmental policy and overseeing the implementation of NEPA by federal agencies.

Chert: A dense sedimentary rock containing quartz, possibly opal, calcite, and remains of siliceous and other organisms. Ancient seafloor deposits.

Cirque: A deep-walled, half-bowl-like recess or hollow situated high on a mountain at the head of a valley, produced by erosion of a glacier.

Classifications: The status of rivers or river segments under the Wild and Scenic Rivers Act ("wild," "scenic," or "recreational"). Classification is based on the existing level of access and human alteration of the site.

Comprehensive Management Plan (CMP): A plan to protect and enhance a Wild and Scenic River. The Merced River Plan is the National Park Service's comprehensive management plan for segments of the Merced River corridor under its jurisdiction.

Concession Services Plan: The plan that guides the management of the concession enterprises, such as lodging, food services, retail and other services in Yosemite National Park.

Cryptogamic crust: Cryptogams, or cryptogamic crusts, are a thin crust made up of mosses, lichens, algae, and bacteria. These organisms form a biotic layer over unvegetated areas between shrubs, grasses, and flowering plants in undisturbed arid and semi-arid lands of the world, including the alpine and subalpine zones of the upper Merced River. Cryptogams function as soil builders forming a spongy layer that protects against erosion, absorbs moisture, and provides nitrogen and other nutrients for plant growth. When frozen, the cryptogamic crust uplifts and cracks, providing seed germination sites.

Day excursion visitor: One of two categories of day visitors. These are visitors who do not spend the night in the park or in the surrounding local counties, spending only one day in Yosemite before leaving the region to spend the night at home or in lodging outside the area. The other category of day visitors stay overnight locally outside of the park (the surrounding region consisting of Madera, Mariposa, Merced, Mono, and Tuolumne Counties) as part of their visit to Yosemite (referred to as "local overnighter").

Day visitor: Visitors that do not stay overnight in the park. Includes both local overnighters and day excursion visitors.

Decibel (dBA): A unit of measure of sound intensity.

Desired conditions: A set of goals aimed to achieve certain levels and types of visitor experiences, resource conditions, facilities and uses in a specific or general area of the Merced River corridor. These goals are revealed in management zoning schemes within the corridor boundaries.

Developed Zones: These zones are prescribed within Recreational designated segments of the Merced Wild and Scenic River corridor and will be managed to direct high-impact activities and facilities to areas better able to withstand heavy use and/or already developed locations in order to further protect and enhance Outstandingly Remarkable Values within other parts of the corridor.

Diverse Visitor Experience Zones: These zones are prescribed within Scenic or Recreational designated segments of the Merced Wild and Scenic River corridor and will be managed based upon the principals to protect and enhance the natural functioning of Outstandingly Remarkable Values, while accommodating moderate levels of visitor use. This will be achieved by maintaining, wherever possible, the integrity of the overall ecological unit (such as meadow, woodland, or wetland), while allowing for some human alternation of the landscape.

Ecological restoration: Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.

Ecosystem: An ecosystem can be defined as a geographically identifiable area that encompasses unique physical and biological characteristics. It is the sum of the plant community, animal community, and environment in a particular region or habitat.

El Portal Administrative Site: The area outside the western boundary of the park along Highway 140 under the jurisdiction of the National Park Service used to locate park operations and administrative facilities for Yosemite National Park.

Emergent wetland: A wetland characterized by frequent or continual inundation dominated by herbaceous species of plants typically rooted underwater and emerging into air (e.g., cattails, rushes). The emergent wetland class is characterized by erect, rooted, herbaceous hydrophytes (e.g., cattails, rushes), excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Perennial plants usually dominate these wetlands. All water regimes are included, except sub-tidal and irregularly exposed.

Environmental Assessment: A public document required under the National Environmental Policy Act (NEPA) that identifies and analyzes activities that might affect the human and natural environment. An environmental assessment is a concise public document which provides sufficient evidence and analysis for determining whether to prepare an EIS, aids an agency's compliance with NEPA when no EIS is necessary, and it facilitates preparation of an EIS when one is necessary. s

Environmental Impact Statement (EIS): A public document required under the National Environmental Policy Act (NEPA) that identifies and analyzes activities that might affect the human and natural environment.

Environmentally Preferable Alternative: The environmentally preferable alternative is the alternative within the range of alternatives presented in a Draft Environmental Impact Statement (EIS) that best promotes the goals of the National Environmental Policy Act (NEPA). In general, this is the alternative causes the least damage to the environment and best protects natural and cultural resources. In practice, one alternative may be more preferable for some environmental resources while another alternative may be preferable for other resources. *(The NEPA Handbook)*

Erratic: A rock fragment of any size carried by glacial ice, or by floating ice, deposited at some distance from the outcrop of origin.

Facilities: Buildings and the associated supporting infrastructure such as roads, trails, and utilities.

Fen: An open wetland system with very high nutrients and productivity that receives some drainage from surrounding mineral soils and usually supports marsh-like vegetation (sedge, rushes, reeds, horsetails, grasses).

Finding of No Significant Impact (FONSI): The public document describing the decision made on selecting the "preferred alternative" in an environmental assessment. See "environmental assessment."

Fire return interval: The typical period of time between naturally occurring fires.

Floodplain: A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial: Of or pertaining to a river. Fluvial is a technical term used to indicate the presence or interaction of a river or stream within the landform.

Fluvial geomorphic response: The interaction of a flowing river with the surrounding landform.

Frazil ice: Stream ice with the consistency of slush, formed when small ice crystals develop in super-cooled stream water as air temperatures drop below freezing. These ice crystals join and are pressed together by newer crystals as they form. Frazil ice sometimes occurs at Yosemite Falls.

Frazil ice flooding: Downslope movement of accumulated frazil ice.

Free-flowing river: Existing or flowing in natural condition without impoundment, diversion, straightening, riprapping, or other modification of the waterway (as defined in the Wild and Scenic Rivers Act – 16 USC 1286 [b]).

Glacial till: Glacially transported and unconsolidated mixtures of clay, silt, sand, and gravel deposited directly by and underneath a glacier without being reworked by melt water.

Glaciation: Effects on landforms produced by the presence and movement of a glacier.

Geomorphic: Of or pertaining to the form of the Earth or of its surface features.

Governing mandates: The National Park Service is directed to address user capacity, resource protection, and public enjoyment of park resources through a number of pieces of legislation such as laws, regulations, policies, and programs referred to in the Revised Merced River Plan/SEIS as governing mandates. These mandates establish the authority and responsibility for management in Yosemite National Park.

Granitic rocks: Igneous rocks (intrusive magma) that have cooled slowly below the Earth's surface typically consisting of quartz, feldspar, and mica. In contrast to granitic rocks, if magma erupts at the Earth's surface, it is referred to as lava. Lava, when cooled, forms volcanic rocks.

Groundwater: All subsurface water (below soil/ground surface), distinct from surface water.

Groundwater recharge: The process involved in the absorption and addition of surface water to the zone of saturation or aquifer.

Hazardous material: A substance or combination of substances, that, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either: (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Hazardous waste: Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, spilled, or contaminated, or that are being stored temporarily prior to proper disposal.

Headwaters: The point or area of origin for a river or stream.

High Sierra Camps: Overnight lodging facilities operated by the concessioner in the wilderness areas that include tent cabins, food service, and other amenities. Merced Lake High Sierra Camp is one of the High Sierra Camps.

Hydrophytes: Any plant growing in water or in a substrate that is at least periodically deficient in oxygen as a result of excessive water. Plants typically found in wetland habitats.

Hydrologic response: The response of a watershed due to precipitation. Usually refers to the resulting streamflow from a precipitation event.

Implementation plan: Implementation plans, which tier off of programmatic plans (like the *General Management Plan*) focus on "how to implement an activity or project needed to achieve a long-term goal. Implementation plans may direct specific projects as well as ongoing management activities or programs. They provide a more extensive level of detail and analysis than do general management plans. Implementation plans are required to undergo NEPA review.

Implementation project: Implementation projects are specific actions identified in an implementation plan

Indicators: Indicators under the VERP framework are specific and measurable physical, ecological, or social variables that reflect the overall condition of a zone or area caused by visitor use and/or visitor use related impacts. Indicators serve as early warning signs that too much use is occurring, or that the types of use are having an adverse affect on Outstandingly Remarkable

Values. Resource indicators measure visitor impacts on the biological, physical and/or cultural resources of a park; social indicators measure impacts on the visitor experience.

Interim facility limits: Interim facility limits as described in the Revised Merced River Plan/SEIS are temporary limitations placed on the addition or reduction of facilities during the 5-year period of development of the Visitor Experience and Resource Protection Program in Alternative 2. Interim facility limits define the allowable number of lodging units, campsites, and parking spaces (including bus parking spaces) within each segment of the Merced River corridor. Upon completion of the 5-year VERP development period, or when park management determines VERP data has the ability to inform management decisions, the interim facility limits would be lifted.

Interim period: A 5 year period defined only in Alternative 2. This period begins the day the Record of Decision is signed (thereby placing the Revised Merced River Plan/SEIS into effect), during which the National Park Service will continue to monitor VERP indicators and standards to develop baseline data for resource and social conditions within areas of the Merced River corridor. As specified by the Ninth Circuit Court of Appeals, the Wild and Scenic River Act "require[s] that the VERP be implemented through the adoption of quantitative measures sufficient to ensure its effectiveness as a current measure of user capacities. If the National Park Service is correct in projecting that is will need five years fully to implement the VERP, it may be able to comply with the user capacity mandate in the interim by implementing preliminary or temporary limits of some kind."

Intrusive: A body of magma that is injected or is intruded into the pre-existing rock.

Impoundment: A dam or other structure to obstruct the flow of water in a river or stream.

Krummholz: Krummholz is the name given to dwarfed and stunted trees that occupy environments characterized by intense solar radiation, high winds, excessive salts, and/or large diurnal temperature fluctuations.

Ladder fuels: Dead or otherwise flammable material that provides a nexus between surface (ground) fuel layers (e.g., grasses) and aerial or canopy (e.g., trees) fuel layers. Ladder fuels are typically composed of immature trees, shrubs, or dead or downed branches.

Limits of Acceptable Change (LAC): The Limits of Acceptable Change process focuses on human-induced impacts to the environment. Recreation researchers developed this process to determine how much human-induced change is acceptable. The objective of LAC is to address impacts of public use and to preserve the environmental setting and resources for future recreational use.

Limnetic: All deepwater habitats within a lacustrine system. Many small lacustrine systems have no limnetic subsystem. (See lacustrine.)

Liquefaction: A process by which water-saturated materials (including soil, sediment, and certain types of volcanic deposits) lose strength and may fail during strong groundshaking. The transformation of granular material from a solid state into a liquefied state as a consequence of increased pore-water pressure.

Local overnighter: One of two categories of day visitors. These are visitors who stay overnight locally outside of the park as part of their visit to Yosemite (the surrounding region consisting of Madera, Mariposa, Merced, Mono, and Tuolumne Counties). The other category of day visitors does not spend the night in the park or in the surrounding local counties, spending only one day in Yosemite before leaving the region to spend the night at home or in lodging outside the area (referred to as "day excursion visitor").

Lacustrine: Of or relating to lakes.

Main stem (Merced River): The sections of the Merced River beginning at the headwaters near the Sierra Crest and continuing through Yosemite Valley, the Merced River gorge, El Portal, and further downstream.

Management action: Actions taken by park management to protect river values and return conditions to established standards based upon information gathered by the Visitor Experience & Resource Protection (VERP) monitoring program.

Management Action Toolbox: A range of potential management actions may be implemented when conditions for a particular VERP indicator are approaching or not meeting a set standard. The Revised Merced River Plan/SEIS has identified a list of potential management actions in Table II-3: Management Action Toolbox that illustrate types of management actions the park could choose to implement depending on what is appropriate. The actual management actions selected would depend upon the particular impact, setting, and situation encountered.

Management zone: A geographical area for which management directions or prescriptions have been developed to determine what can and cannot occur in terms of resource management, visitor use, access, facilities or development, and park operations.

Management Zone Limits: Represents the maximum number of users allowed within each management zone at any one time. These management zone limits would be based upon proposed capacity factors, which differ depending on the desired conditions for the area as defined by the management zoning and depending on specific conditions. These factors are largely based on the Recreational Opportunity Spectrum method of addressing user capacity.

Metamorphic rock: Metamorphic refers to rocks derived from pre-existing rocks by mineralological, chemical, structural changes.

Mitigation: Activities that will avoid, reduce the severity of, or eliminate an adverse environmental impact.

Moraine: Debris, such as boulders, stones, or sediment deposited by a glacier.

National Environmental Policy Act (NEPA): The federal act that requires the development of an environmental impact statement (EIS) for federal actions that might have substantial environmental, social, or other impacts.

National Park Service Organic Act: In 1916, the National Park Service Organic Act established the National Park Service in order to "promote and regulate use of parks..." and defined the purpose of the national parks as "to conserve the scenery and natural and historic objects and wild life therein and to provide for the enjoyment of the same in a manner and by such means as will leave them unimpaired for the enjoyment of future generations." This law provides overall guidance for the management of Yosemite National Park.

National Parks and Recreation Act: The 1978 law that establishes National Parks, Monuments, Recreation Areas and other recreation lands under the jurisdiction of the Department of the Interior. This law continues to be amended as new lands are acquired or boundaries of existing lands are changed.

Natural processes: All processes such as hydrologic, geologic, ecosystemic that are not the result of human manipulation.

No Action Alternative: The alternative in a plan that proposes to continue current management direction. "No action" means the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward.

Nonmotorized watercraft: A class of boats that includes rafts, kayaks, innertubes, and inflatable air mattresses.

Nonnative species: Species of plants or wildlife that are not native to a particular area and often interfere with natural biological systems.

Nonpoint pollution sources: Pollutants that enter the environment from general non-contained locations. Examples of nonpoint sources are roadways, parking lots, and landscaped areas. Pollutants from these locations can include petrochemicals, heavy metals, and fertilizers.

Nonwilderness: Areas that have not been designated for special protection under the Wilderness Act.

NO_X: Generic term for a group of highly reactive compounds, all of which have nitrogen and oxygen in varying amounts.

National Park Service Management Policies: A policy is a guiding principle or procedure that sets the framework and provides direction for management decisions. National Park Service (NPS) policies are guided by and consistent with the Constitution, public laws, Executive proclamations and orders, and regulations and directives from higher authorities. Policies translate these sources of guidance into cohesive directions. Policy direction may be general or specific. It may prescribe the process by which decisions are made, how an action is to be accomplished, or the results to be achieved. The primary source of National Park Service policy is the publication *Management Policies 2001*. The policies contained therein are applicable Service-wide. They reflect National Park Service management philosophy. Director's Orders supplement and may amend *Management Policies*. Unwritten or informal "policy" and people's various understandings of National Park Service traditional practices are never relied on as official policy.

Opportunity purchases: The process of public entities purchasing land as it becomes available from willing sellers on the real estate market. This is in distinction to using nonvoluntary means to compel an owner to sell (e.g., eminent domain).

Ordinary high water: The area along the river corridor that would receive floodwaters during a ordinary precipitation year (based on a 2.33-year flood). A 2.33-year flood event has the probability of occurring roughly 50 percent of the time during any given year.

Outstandingly Remarkable Values (ORVs): Those resources in the corridor of a Wild and Scenic River that are of special value and warrant protection. ORVs are the "scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values…that shall be protected for the benefit and enjoyment of present and future generations" (16 USC 1272).

Overnight capacity: Refers to the actual number of visitors who can be accommodated each night in lodging, camping, and wilderness High Sierra Camp facilities within Yosemite National Park. Capacity is determined by counting the maximum number of people permitted in each campsite and/or the room occupancy within lodging units.

Oxbow: A closely looping stream meander or lake resembling the U-shaped frame embracing an ox's neck, having an extreme curvature such that only a neck of land is left between two parts of land.

Paleoenvironment: Ancient environment.

Palustrine: The palustrine system was developed to group the vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, which are found throughout the United States. It also includes the small, shallow, permanent, or intermittent waterbodies often called ponds. Palustrine wetlands may be situated shoreward of lakes, river channels, or estuaries; on river floodplains; in isolated catchments; or on slopes. They may also occur as islands in lakes or rivers. The Palustrine system includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5%. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 hectares (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2 meters at low water; and (4) salinity due to ocean-derived salts less than 0.5%.

Park overnighter: Visitors who lodge or camp overnight within Yosemite National Park.

Particulate matter (PM-10 and PM-2.5): Fractions of particulate matter characterized by particles with diameters of 10 microns or less (PM-10) or 2.5 microns or less (PM-2.5). Such particles can be inhaled into the air passages and the lungs and can cause adverse health effects. High levels of PM-2.5 are also associated with regional haze and visibility impairment.

Planning: A dynamic, interdisciplinary, process for developing short- and long-term goals for visitor experience, resource conditions and facility placement.

Pluton: A general term applied to any body of intrusive igneous rock that originates deep in the earth. Named for Pluto, Greek god of the underworld.

Point bars: Depositional areas on the inside of a meander bend. The area where material is deposited along a river, usually on the inside of a meander along a river (e.g., west side of

Housekeeping Camp).

Potential wilderness additions: Areas in wilderness where an existing use precluded full designation under the California Wilderness Act.

Preferred Alternative: The preferred alternative is the alternative within the range of alternatives presented in a Draft Environmental Impact Statement (EIS) that the agency believes would best fulfill the purpose and need of the proposed action. While the preferred alternative is a different concept from the environmentally preferable alternative, they may also be one and the same for some EISs. *(The NEPA Handbook)*

Prescription: A guideline that directs the management of a specific area by describing the type and intensity of activities, facilities, and park operations that can and cannot occur. See "management zone."

Pristine: Unaltered, unpolluted by humans.

Programmatic plan: Programmatic plans establish broad management direction for Yosemite National Park. The 1980 *General Management Plan* it a programmatic plan with a purpose to set a "clearly defined direction for resource preservation and visitor use" and provide general directions and policies to guide planning and management in the park. The Merced River Plan is also a programmatic pland that guides future activities in the Merced River corridor. Programmatic plans are required to undergo NEPA review.

Protohistoric: Immediately before written history.

Public comment process: The public comment process is a formalized process required by the National Environmental Policy Act (NEPA) in which the National Park Service must publish a Notice Of Availability in the *Federal Register* which provides public notice that a Draft Environmental Impact Statement (EIS) and associated information, including scoping comments and supporting documentation, is available for public review and input pursuant to the Freedom Of Information Act. In addition, the National Park Service must conduct formal public hearings on the Draft EIS when required by statute or the Council on Environmental Quality NEPA Regulations.

Public scoping process: Scoping is a formalized process used by the National Park Service to gather the public's and other agencies' ideas and concerns on a proposed action or project. A Notice Of Intent (NOI) is published in the *Federal Register* announcing the agency's intent to prepare an Environmental Impact Statement and a request for written public/other agency scoping comments to further define the goals and data needs for the project. In addition, although not required by the National Environmental Policy Act (NEPA) nor the Council on Environmental Quality (CEQ) NEPA Regulations, public scoping meetings may be held and integrated with any other early planning meetings relating to the proposed project.

Record of Decision: The public document describing the decision made on selecting the "preferred alternative" in an environmental impact statement. See "environmental impact statement."

Recreation Opportunity Spectrum (ROS): ROS was developed in the late 1970s by the U.S.

Forest Service in dealing with increasing demands for recreation and the need to provide for a variety of recreation opportunities on national forest lands. ROS establishes a system for designating areas based upon the factors that comprise the "recreation opportunity" and provides a method for classifying areas and identifying the desired resource, social and managerial conditions for each area. ROS classifications could be compared to management zoning as prescribed in the Merced River Plan.

Riffle (riffle/pool): A riffle is part of the natural sequence of a stream pattern as it alters between riffles and pools in the linear direction. Riffles are the steeper, shallower areas where turbulence is usually present due to shallow water flowing over the channel substrate. Pools are the calmer, less steep areas where deeper water is present, typically in a wider channel width. Additionally, there are glides that are linear stream areas where no turbulence is present due to sufficiently deep water but stream velocities are higher than typical of pool areas. Glides are usually not as wide across the stream channel as compared to pools.

Riparian areas: The land area and associated vegetation bordering a stream or river.

Riprap: A layer of large, durable fragments of broken rocks specially selected and graded, thrown together irregularly or fitted together to prevent erosion by waves or currents.

Riverine: Of or relating to a river. A riverine system includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts in excess of 0.5%. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.

River corridor: The area within the boundaries of a Wild and Scenic River (e.g., the Merced River corridor).

River Protection Overlay: A buffer area within and adjacent to the river that allows for the protection and restoration of natural and aquatic ecosystem processes.

Rockfall shadow zone: The area extending out from the talus zone in which individual rocks may travel outward beyond the talus.

Section 7 determination process: Section 7 of the Wild and Scenic Rivers Act specifies restrictions on hydro and water resrouces development projects. Water resources projects are subject to Section 7 of the Wild Scenic Rivers Act (16 USC 1278). Section 7(a) states, "*no department or agency of the United States shall assist by loan, grant, license or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration.*"

Section 35: The area on the South Fork of the Merced River, originally designated by the U.S. Geological Survey, that demarcates the "township of Wawona" and contains intermixed parcels of private and National Park Service lands.

Sediment: A particle of soil or rock that was dislodged, entrained, and deposited by surface runoff or a stream. The particle can range in size from microscopic to cobble stones.

Segment: Section 2 of the Wild and Scenic Rivers Act requires that the Merced River be classified and administered as "wild", "scenic", or "recreational" river segments, based on the condition of the river corridor at the time of boundary designation. The classification of a river segment indicates the level of development on the shorelines, the level of development in the watershed, and the accessibility by road or trail. "Wild" segments are free of impoundments and generally inaccessible except by trail, with watersheds and/or shorelines essentially primitive and unpolluted; "Scenic" segments are free of impoundments, with watersheds and shorelines largely undeveloped, but accessible in places by roads; and, "Recreational" segments are readily accessible by road or railroad, may have some development along the shorelines, and may have undergone impoundment or diversion in the past. The Merced River is divided into eight segments.

Segment Limits: Represents the maximum number of users that would be allowed in a segment of the Merced River corridor on any single day during peak visitor periods.

Site hardening: Any development that creates an impervious ground surface. Usually used as a way to direct visitor use and reduce impacts to resources.

Snag: A standing dead tree.

Social trails: A social trail is an informal, nondesignated trail between two locations. Social trails often result in trampling stresses to sensitive vegetation types.

South Fork (Merced River): The segments of the Merced River passing through Wawona and entering the main stem west of El Portal.

Standards: Standards are the minimum acceptable conditions established for VERP indicators. They identify when management action should be taken to reduce or reverse visitor-use related impacts. A standard does *not* define an intolerable condition nor is it a condition that managers should strive to achieve, unless intolerable conditions already exist.

Subalpine: Designating or growing in mountain regions just below the timberline.

Succession: The process by which vegetation recovers following a disturbance or initially develops on an unvegetated site.

Superintendent's Compendium: Under the authority of 16 U.S.C., Section 3, and Title 36 Code of Federal Regulations, Chapter 1, Parts 1-7; the Compendium of Superintendent's Orders was established for Yosemite National Park, referred to as the "Superintendent's Compendium" in the Revised Merced River Plan/SEIS. Each park superintendent has discretionary authority to regulate or limit certain uses, and/or require permits for specific activities within the boundaries of a national park. (See II-9 for text version of definition)

Talus: Rock fragments of any size or shape derived from and lying at the base of a cliff or very steep rocky slope. Also refers to outward sloping and accumulated heap of loose broken rock considered as a unit and formed primarily by falling, rolling, and sliding.

Talus zone: Area where the majority of rock materials are deposited during a mass movement (rockfall) event.

Threatened and Endangered Species: Species of plants that receive special protection under state and/or federal laws. Also referred to as "listed species" or "endangered species."

User capacity: As it applies to parks, user capacity is the type and level of use that can be accommodated while sustaining the desired resource and social conditions based on the purpose and objectives of a park unit.

User: Visitors, employees, and residents in the Merced River corridor.

U-Shaped valley: A glacially carved valley having a pronounced parabolic cross-sectional profile suggesting the form of a broad letter "U" and characterized by steep sides and a nearly flat bottom.

Visitor Capacity Goals of General Management Plan: The *General Management Plan* identifies maximum daily visitor capacities for major developed areas of the park based on planned future facility levels in these developed areas. These future visitor capacity goals were well below the actual capacities in 1980 when the *General Management Plan* was completed and called for a reduction and reallocation of visitor facilities to reach these goals. Although the *General Management Plan* identifies maximum daily visitor capacities for major developed areas of the park, it notes that park management does not directly limit overall visitation levels through entrance station limits or headcounts. Instead use levels are controlled through the provision of infrastructure and the specific activity restrictions described below.

Visitor experience: The perceptions, feelings, and reactions a park visitor has in relationship with the surrounding environment.

Visitor Experience and Resource Protection (VERP): A user capacity method developed for the National Park Service to measure and manage the impacts of use on the visitor experience and the resource conditions in national parks. VERP is an ongoing, iterative system that measures the type and level of visitor use that can be accommodated while sustaining the desired resource and social conditions that complement the purposes of the park units and their management objectives. The VERP framework contains nine elements, four of which are key to developing a user capacity program. The VERP user capacity model establishes (1) a management zoning designation, (2) indicators or measurable variables that reflect the overall condition of a zone, (3) standards that set the basis for judging whether or not conditions are being met, and (4) management actions that must be take if monitoring reveals that conditions are not within standard.

Visitor use: Refers to the types of recreation activities visitors participate in, numbers of people in an area, their behavior, the timing of use, and distribution of use within a given area.

Visitor use levels: Refers to the quantity or amount of use an specific area receives, or the amount of parkwide visitation on a daily, monthly or annual basis.

Walk-in campground: A campground with consolidated parking areas separated from the individual campsites. Campers walk a short distance from the parking area to their campsites.

Water resources project: Non-FERC licensed projects such as dams, water diversions, fisheries habitat and watershed restoration, bridges and other roadway construction/reconstruction, bank stabilization, channelization, levee, boat ramps and fishing piers that occur within the bed and banks of a designated Wild and Scenic River (IWSRCC 1999).

Watershed: The region drained by, or contributing water to, a stream, lake, or other body of water. Synonym: basin or drainage basin.

Wetland: Wetlands are defined by the U.S. Army Corps of Engineers (CFR, Section 328.3[b], 1986) as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wild and Scenic River: A river receiving special protection under the Wild and Scenic Rivers Act.

Wilderness: Areas designated as Wilderness and protected by the provisions of the 1964 Wilderness Act. Designated Wilderness areas are characterized by a lack of human interference in natural processes.

Wilderness Act of 1964: The Wilderness Act restricts development and activities to maintain certain places where wilderness conditions predominate.

Wilderness Impact Monitoring System (WIMS): Wilderness monitoring is an integral part of Yosemite's wilderness management program. Visitor use patterns have been tracked since 1975 from wilderness permits and field reports by rangers. Monitoring of campsite and trail impacts began in the 1970s. A program now called the Wilderness Impact Monitoring System (WIMS) monitors and evaluates campsite conditions in the wilderness that ensure that the trailhead quotas and wilderness education about proper backcountry care are adequately protecting wilderness values. Using WIMS, visitor satisfaction information, patrol data, and a variety of other studies, the National Park Service conducts wilderness-wide inventory and monitoring. Data gathered from these studies are used to determine when, where, and why significant change occurs, to adjust management practices as appropriate to eliminate unacceptable impacts, and to provide a system for tracking those changes.

Wilderness Trailhead Quota System: The Wilderness Trailhead Quota System was established in the 1970s to protect wilderness areas within Yosemite National Park. This system assigns a daily quota for each wilderness trailhead in the park. The quotas are based on scientific studies that evaluated ecological condition and historic use patterns. Controlling use at the trailhead allows for maximum visitor freedom—considered a cornerstone in wilderness experience—while allowing the park to limit or disperse use as appropriate. The Wilderness Trailhead Quota System allows for a total of 1,280 overnight visitors to enter the wilderness each day. Day use in Wilderness is not currently limited or controlled.

Wilderness Zones: These zones within segments of the Merced Wild and Scenic River corridor flow through designated Wilderness and are managed under the guidance and requirements of the 1964 Wilderness Act and the California Wilderness Act of 1984. As such, these segments will continue to be managed to preserve the environment in which the natural world, along with the processes and events that shape it, are largely unchanged by human use, and to allow for various forms of exploration in an environment primarily free of modification.

Yosemite National Park Enabling Legislation: Three separate legislative acts form the enabling statutes for the current Yosemite National Park. On Jun 30, 1864, Congress granted the State of California the Yosemite Valley and Mariposa Grove of Big Trees to “be held for public use, resort and recreation.” On October 1, 1890, Congress set aside Yosemite National Park as a “forest reservation” to preserve the “curiosities” and “wonders” in their natural condition. In 1906, the State of California granted the Mariposa Grove of Big Trees and Yosemite Valley back to the federal government.

Acronyms and Abbreviations

ACHP	Advisory Council on Historic Preservation
BLM	Bureau of Land Management
CDFG	California Department of Fish and Game
CDMG	California Department of Mines and Geology
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CMP	Comprehensive Management Plan
Corps	U.S. Army Corps of Engineers
dB	Decibels
dBA	Decibels on the “A” weighted scale
DNC	Delaware North Company
EA	Environmental Assessment
EIS	Environmental Impact Statement
FEIR	Final Environmental Impact Report
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
g	acceleration due to gravity
GMP	*General Management Plan*
GPS	Global Positioning System
gpd	Gallons per day
gpm	Gallons per minute
HVAC	Heating, Ventilation, and Air Conditioning
IWSRCC	Interagency Wild and Scenic Rivers Coordinating Council
kWh	Kilowatt hour
L_{eq}	Energy equivalent level
LAC	Limits of Acceptable Change
MCAG	Merced County Area Government
mya	Million years ago
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_X	See Glossary
NPS	National Park Service
ORVs	Outstandingly Remarkable Values
PG&E	Pacific Gas and Electric Company

PM-10	Particulate matter
PSD	Prevention of Significant Deterioration
RV	Recreational vehicle
ROS	Recreation Opportunity Spectrum
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
USC	United States Code
U.S. EPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VAMP	Management Process for Visitor Activities
VERP	Visitor Experience and Resource Protection
VIM	Visitor Impact Monitoring
VIMS	Visitor Impact Monitoring System
VOC	Volatile Organic Compound
WIMS	Wilderness Impact Management System
YARTS	Yosemite Area Regional Transportation System

Chapter IX

Bibliography

Chapter IX: Bibliography

References

Advisory Council on Historic Preservation

1999 Programmatic Agreement among the National Park Service at Yosemite, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation regarding Planning, Design, Construction, Operations and Maintenance, Yosemite National Park, California.

Anderson, R. Scott, and Scott L. Carpenter

1991 Vegetation Change in Yosemite Valley, Yosemite National Park, California, During the Protohistoric Period. *Madrono* 38(1): 1-13.

Andren, H.P.

1994 Effects of habitat fragmentation on birds and mammals in different landscapes with different proportions of suitable habitat: a review. *Oikos* (Copenhagen) 71:355-366.

Baskerville, G.

1985 Adaptive Management – Wood Availability and Habitat Availability. *The Forestry Chronicle*, 61(2):171-175.

Bates, Craig D. and Martha J. Lee

1990 *Tradition and Innovation: A Basket History of the Indians of the Yosemite-Mono Lake Area*. Yosemite: Yosemite Association.

Bates, Craig D. and Karen P. Wells

1981 Indian and Early Anglo Occupation of El Portal. Ms. on file, Yosemite National Park.

Beedy, E. C.

1982 *Bird community structure in coniferous forests of Yosemite National Park, CA.* Ph.D.diss., University of California, Davis.

Beier, P.

1991 Cougar Attacks on Humans in the United States and Canada. Wildlife Society Bulletin, 19:403-412.

Berg, Neil H.

1994 Ice in stream pools in California's Central Sierra Nevada spatial and temporal variability and reduction in trout habitat availability. *North American Journal of Fish Management,* 14(2):372-384.

Bibby, Brian

1994 *An Ethnographic Evaluation of Yosemite Valley: The Native American Cultural Landscape*. Ms. on file, Yosemite National Park.

Bilby, R.E. and Likens, G.E.

1980 Importance of Organic Debris Dams in the Structure and Function of Stream Ecosystems. *Ecology*, 61 (5): 1107-1113.

Bitterroot Restoration, Inc.

1999 *Roadslope Revegetation Plan for the El Portal Road Improvements Project, Yosemite National Park* (50% Draft). Prepared for the National Park Service.

BLM – see *Bureau of Land Management*

Borell, A. E.

1932 Fish and Fishing in Yosemite. *Yosemite Nature Notes*, 11(8):1–2.

Botti, S. J. and T. Nichols

1980 "The Yosemite and Sequoia-Kings Canyon prescribed natural fire programs 1968-1978." In *Proc. Second Conf. Sci. Res. Natl. Parks*, 10:46-63.

Brittan, M. R.

1948 The chipmunks of the Yosemite region. *Yosemite Nature Notes* 27(7): 92-97.

Browning, Peter

1988 *Yosemite Place Names.* Lafayette, CA: Great West Books.

BRW, Inc.

1994 *Alternative Modes Feasibility Study, Volume IV.*

1999 *Affected Environment Report to the National Park Service, Yosemite National Park, California.*

Bureau of Labor Statistics

2000 *Consumer Price Index – All Urban Consumers*, Base Period: 1982-84=100, downloaded from the Bureau of Labor Statistics website (http://stats.bls.gov/ cpihome.htm) on November 27.

2004 Calculations from Table D-16: Consumer Price Index, Selected Areas, 1950 to 2002 (1982-84=100). U.S. Department of Labor URL: http://stats/bls.gov. Accessed October 22, 2004.

Bureau of Land Management (BLM), U.S. Department of the Interior

1990a *Merced Wild and Scenic River Draft Management Plan*, February.

1990b *Merced Wild and Scenic River Management Plan Environmental Assessment*, April.

1991 *Merced Wild and Scenic River Management Plan* (Final), March.

California Department of Finance

1998 *County Population Projections with Race / Ethnic Detail, Sacramento, California*, December.

2004 Population Projections by Race/Ethnicity for California and its counties 2000-2050 Report 03P-1. URL: www.dof.ca.gov/html/demograph/DRU-Publications/Projections/P1.htm. Accessed October 2004.

California Department of Fish and Game (CDFG)

1962 *Direct effect of Malathion on various forms of fish and wildlife in Yosemite National Park* by C. M. Ferrel. Project Number: Cal. W-052-R-06.

1965 Wildlife Investigations Laboratory: preliminary report of the food habits and condition of Yosemite mule deer. Project Number: Cal. W-052-R 09.

1991 Summary of Creel Census. Memo to Steve Thompson, U.S. Department of Interior, National Park Service. July.

1999 California Natural Diversity Database (CNDDB), for the USGS quadrangles containing the main stem and South Fork of the Merced River.

2000 Wildlife Habitat Relationships Database, Version 7.0.

2004a California Natural Diversity Data Base printout for USGS 7.5-minute topographic quadrangles: Mt. Lyell, Merced Peak, Sing Peak, Timber Knot, Half Dome, El Capitan, Wawona, Mariposa Grove, El Portal, Kinsley, Buckingham Mtn., Tenaya Lake, Vogelsgang Peak, Tamarack Flat, and Yosemite Falls. Information dated July 2004.

2004b Wild Trout & Catch-and-Release Waters; Merced River, Department of Fish and Game. URL:http://www.dfg.ca.gov/fishing/html/WildAndHeritageTrout/waters/MercedRiver.htm.

California Division of Mines and Geology (CDMG)

1996 "Probabilistic Seismic Hazard Assessment for the State of California", from Open-File Report 96-08 (Draft).

1997 *Fault-Rupture Hazard Zones in California* by Earl W. Hart. Special Publication 42.

1999 *Seismic Shaking Hazard Maps of California*, Map Sheet 48 by M. Petersen et al. Sacramento: California Division of Mines and Geology.

California Employment Development Department

2004 Labor market information for Madera, Mariposa, Merced, Mono, and Tuolumne Counties. URL:http://www.calmis.ca.gov/file/indproj/. Accessed October 22.

California Environmental Protection Agency, Air Resources Board (CARB)

1996 *Second Triennial Review of the Assessment of the Impacts of Transported Pollutants on Ozone Concentrations in California*, October.

1998a *Emission Inventory* 1996, October.

1998b *Proposed Amendments to the Designation Criteria and Amendments to the Area Designations for State Ambient Air Quality Standards and Proposed Maps of the Area Designations for the State and National Ambient Air Quality Standards*, August.

1999a *Draft Recommendations for Area Designations and Classifications for the New Federal 8-Hour Ozone Standard*, April.

1999b *California Air Quality Data*, 1994, 1995, 1996, 1997; www.arb.ca.gov/adam.

2000 *Recommended Area Designations for the Federal Eight-Hour Ozone Standard*, Staff Report, March.

2004a Area Designations for the Federal PM 2.5 Standard. URL: http://www.arb.ca.gov/desig/pm25desig.htm. Accessed October 24.

2004b Area Designations – 2003, Attachment C: Maps and Tables of Area Designations for State and National Ambient Air Quality Standards. URL: http://www.arb.ca.gov/desig/desig03/desig03.htm. Accessed October 14.

2004c *Air Quality Data Statistics 1999-2003*. URL: http://www.arb.ca.gov/adam/welcome.html. Accessed October 15.

2004d Almanac Emission Projections Data (published in 2004), 2003 Estimated Annual Average Emissions, San Joaquin Valley Unified APCD. URL: http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_YR=2003&F_SEASON=A&SP=2004&F_DIV=0&F_AREA=DIS&F_DIS=SJU. Accessed on October 18.

2004e Forecast Emissions by Summary Category Reports, 2004 Almanac Data, Reactive Organic Gases and Oxides of Nitrogen Projected Emission Inventory, San Joaquin Valley Unified APCD. URL: http://www.arb.ca.gov/ei/emsmain/reportform.htm. Accessed on October 18.

2004f Almanac Emission Projection Data (published 2004), 2003 Estimated Annual Average Emissions, Mariposa County. URL: http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_DIV=0&F_DD=Y&F_YR=2003&F_SEASON=A&SP=2004&F_AREA=CO&F_CO=22. Accessed on October 18.

California Integrated Seismic Network (CISN)

2004 Adobe Hills Swarm – Background Information. *Last modified September 24*, 2004. URL: http://www.cisn.org/special/evt.04.09.18/background.html. Date accessed: September 24, 2004.

California State Board of Equalization

1999a *Table 2. Taxable Sales, by County, First Quarter 1998, Third Quarter 1998, Fourth Quarter 1998 (Preliminary)*. downloaded from the State Board of Equalization website (http://www.boe.ca.gov/news/) on September 23.

1999b *Table 2. Taxable Sales, by City, Second Quarter 1998*, downloaded from the State Board of Equalization website (http://www.boe.ca.gov/news/) on September 23.

2004 *Table 2. Taxable Sales by County 2002-1998* (taxable transactions in thousands of dollars). URL: http://www.boe.ca.gov/news. Accessed October 22.

CARB – see *California Environmental Protection Agency, Air Resources Board.*

Carpenter, S. J.
1970 Observations on the distribution and ecology of the mountain *Aedes* mosquitoes in California. XV. Mosquito problems in the Yosemite National Park Recreational Region. *California Vector Views*, 17:101-108.

Carr, Ethan
1998 *Wilderness by Design: Landscape Architecture and the National Park Service.* Lincoln, NE: University of Nebraska Press.

CDFG – see *California Department of Fish and Game.*

CDMG – see *California Division of Mines and Geology*

Cella Barr Associates
1998 *Hydrologic and Hydraulic Investigation for Proposed Campgrounds in Yosemite National Park, California.* Prepared for the National Park Service.

Central Valley Regional Water Quality Control Board (CVRWQCB)
1998 *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins.* September 15.

CEQ – see *Council on Environmental Quality.*

CH2M Hill
1993 *Hetch Hetchy Water Supply Project Interim Sanitary Survey.* Prepared for the San Francisco Water Department Utilities Engineering Bureau.

Chamberlin, Ed
2004 Personal communication between Ed Chamberlin, National Park Service Fiscal Office, and Elexis Mayer, NewFields International, October.

Cheley, Yolanda
2004 Personal communication between Yolanda Cheley, DNC, and Elexis Mayer, NewFields International, October.

Chow, L., J. van Wagtendonk, S. Thompson, and K. McCurdy
1994 Using wildlife habitat relationship models for land use planning for Yosemite Valley. *Trans. Western Section Wildl. Soc,* 30:49-55.

CISN – see *California Integrated Seismic Network.*

Clark, Galen
1904 Yosemite – Past and Present. *Sunset Magazine,* 22(4):394-396.

Clow, D. W., M. A. Mast, and D. H. Campbell
1996 Controls on Surface Water Chemistry in the Upper Merced River Basin, Yosemite National Park, California. *Hydrological Processes*, 10: 727-746.

Cole, D. N. and G. H. Stankey

1997 "Historical Development of Limits of Acceptable Change: Conceptual Clarifications and Possible Extensions" In: McCool, Stephen F. and Cole, David N., compilers. *Proceedings – Limits of Acceptable Change and related planning processes: progress and future directions*; 1997 May 20-22; Missoula, MT. Gen. Tech. Rep. INT-GTR-317. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Cole, David, Robert Manning and David Lime

2005 "Addressing Visitor Capacity of Parks and Rivers: The debate on visitor capacity heats up, as the authors discuss a previous article on the topic." *Parks and Recreation*, March: 8-12.

Council on Environmental Quality (CEQ)

1981 Forty Most Asked Questions Concerning CEQ's NEPA Regulation. 46 *Federal Register* 18026, 18032. March 16.

1997 Considering Cumulative Effects Under the National Environmental Policy Act.

CVRWQCB – see *Central Valley Regional Water Quality Control Board.*

David Evans and Associates, Inc. (DEA)

2005 Parking data from July 2003 and October 2004 inventories.

Davis, W. E. and C. E. Asay

1983 "The Status of the peregrine falcon in Yosemite National Park: A Progress Report". In: *Proceedings of the First Biennial Conference of Research in California's National Parks*, Charles van Riper III, Lynn D. Whittig and Marsha L. Murphy (eds.), p. 234 - 238.

Davis-King, Shelly

1998 *Johnny Wilson's Place*. Submitted to National Park Service, Yosemite National Park.

DEA – see *David Evans and Associates, Inc.*

Dias, P. C.

1996 Sources and sinks in population biology. *Trends Ecol. Evol*, 11:326-330.

Dornbusch & Company, Inc.

1999 *Socioeconomic Report to the National Park Service, Yosemite National Park, California.* Prepared for the National Park Service.

Drost, Charles A. and Gary M. Fellers

1996 Collapse of a regional frog fauna in the Yosemite area of the California Sierra Nevada, USA. *Conservation Biology*; 10(2):414-425.

Eagan, S. M.

1998 *Modeling Floods in Yosemite Valley, California Using Hydrologic Engineering Center's River Analysis System.* Master's Thesis, University of California, Davis.

Elser, A. A.

1968 Fish Populations of a Trout Stream in Relation to Major Habitat Zones and Channel Alterations. *Transactions of the American Fisheries Society*, 97:389-397.

Environmental Science Associates (ESA)

2004a *Technical Memorandum: Preliminary Wetlands Assessment: El Portal Segment of the River*. September 28, 2004.

2004b *Draft Technical Report – Biological ORV-based River Corridor Boundary for the El Portal Segment of the Merced River*. September 21, 2004.

Erman, D. C., E. D. Andrews, and M. Yoder-Williams

1988 Effects of winter floods on fishes in the Sierra Nevada. *Can. J. Fish. Aquat. Sci.*, 45(12):2195-2200.

ESA – see *Environmental Science Associates.*

Evans, W.

1944 Fishes of Yosemite National Park, *Yosemite Nature Notes,* 23(1)1–21.

Federal Highway Administration (FHWA), U.S. Department of Transportation

1994 *Yosemite National Park Interim Hydraulic Report for the South Fork Merced River Bridge*. Lakewood, CO: Central Federal Lands Highway Division.

1995 *Development of National Reference Energy Mean Emission Levels for FHWA Traffic Noise Model (FHWA TNM), Version 1.0.* Final Report, November.

1997 *CA YOSE 140-1(1), El Portal Road Special Site Permit, Cascade Dam Removal and Merced River Cascade Restoration Report*. Central Federal Lands Highway Division.

Federal Register

2001 Endangered and Threatened Wildlife and Plants: Final Determination of Critical Habitat for the California Red-legged Frog in Alameda, Butte, Contra Costa, El Dorado, Fresno, Kern, Los Angeles, Marin, Mariposa, Merced, Monterey, Napa, Plumas, Riverside, San Benito, San Diego, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Stanislaus, Tehama, Toulumne, and Ventura Counties, California: Final Rule. Vol. 77, No. 49, March 13.

2004 Endangered and Threatened Wildlife and Plants: Proposed Designation Determination of Critical Habitat for the California Red-legged Frog (*Rana aurora draytonii*): Proposed Rule. Vol. 69, No. 71, April 13.

Federal Transit Administration (FTA), U.S. Department of Transportation

1995 *Transit Noise and Vibration Impact Assessment.*

FHWA – see *Federal Highway Administration.*

Forman, R. T. T.

1995 *Land Mosaics: the Ecology of Landscapes and Regions*. New York: Cambridge Univ. Press.

Fritzke, Sue and Peggy Moore

1998 Exotic Plant Management in National Parks of California. *Fremontia,* 26(4):49-53.

Fritzke, Susan L.

1997 "A California Black Oak restoration project in Yosemite Valley." In *Proceedings of a Symposium on Oak Woodlands: Ecology, Management, and Urban Interface Issues,* edited by N. Pillsbury, J. Verner and W. D. Tietje, 281-288. General Technical Report PSW-GTR-160. Albany, CA: Pacific Southwest Research Station.

FTA – see *Federal Transit Administration.*

Gilbert, R.

1980 "Dispersed winter recreation use in the Badger Pass backcountry of Yosemite National Park." In *Proc. Second Conf. Sci. Res. Natl. Parks*, 6:77-97.

Graber, D. M.

1981 *Ecology and management of black bears in Yosemite National Park.* Ph.D. dissertation, University of California, Berkeley.

1996 "Status of terrestrial vertebrates." In *Sierra Nevada Ecosystem Project, Vol. 2,* 709-734. Davis, CA: University of California.

Graber, D. M. and M. White

1983 "Black bear food habits in Yosemite National Park." In *Fifth Int. Conf. Bear Res. Manage,* edited by E. C. Meslow, 1-10.

Graefe, A.

1990 "Visitor Impact Management." In: Graham, R.; Lawrence, R., Eds. *Towards Serving Visitors and Managing Our Resources – Proceedings of a North American Workshop on Visitor Management in Parks and Protected Areas.* Waterloo, ON: University of Waterloo: 213-234.

Gramann, James H.

1992 *Visitors, Alternative Futures, and Recreational Displacement at Yosemite National Park.* Prepared for the National Park Service.

2000 "Protecting Park Resources Using Interpretation." *Park Science*, Vol. 10(1), Spring.

Gregory, S. V., F. J. Swanson, W. A. McKee, and K. W. Cummins

1991 An ecosystem perspective of riparian zones. *Bioscience*, 41:540-551.

Grinnell, J.

1935 A way to "bring back" the native bighorn to the Yosemite. *Sierra Club Bulletin*, 20(1), 28-31.

Grinnell, J. and T. I. Storer

1924 *Animal life in the Yosemite: an account of the mammals, birds, reptiles, and amphibians in the Sierra Nevada.* Berkeley, CA: University of California Press.

Haas, Dr. Glenn E.

2001 Visitor Capacity in the National Park System. *Social Science Research Review*, Vol. 2(1), Spring.

2002 *Visitor Capacity on Public Lands and Waters: Making Better Decisions.* A Report of the Federal Interagency Task Force on Visitor Capacity on Public Lands. Submitted to the Assistant Secretary for Fish and Wildlife and Parks, U.S. Department of the Interior, Washington, D.C. May 1, 2002. Published by the National Recreation and Park Association, Ashburn, Virginia.

2004 "On the Water Front: Vital judicial ruling addresses visitor capacity" *Parks and Recreation* September 2004: 107.

Hargis, C. D. and D. R. McCullough

1984 Winter diet and habitat selection of marten in Yosemite National Park. *Journal of Wildlife Management,* 48(1):140-146.

Harms, Dale R.

1977 "Black bear management in Yosemite National Park." In *Proc. Annual Conf. West. Assoc. State Game Fish Comm.*, 57:159-181.

1980 "Black bear management in Yosemite National Park." In *Papers of the Fourth Int. Conf. Bear Res. Manage,* edited by C. Martinka and K. McArthur, 205-212.

Harris, J. H.

1991. Effects of brood parasitism by Brown-headed Cowbirds on Willow Flycatcher nesting success along the Kern River, California. *Western Birds* 22:13-26.

Hastings, B. C.

1987 Extent of human-bear interaction in the backcountry of Yosemite National Park. *Calif. Fish Game,* 73(3): 188-191.

Hastings, B. C., B. K. Gilbert, and D. L. Turner

1986 "Black bear aggression in the backcountry of Yosemite National Park." In *Int. Conf. Bear Res. Manage,* 6:145-149.

Hof, M. and D. W. Lime

1997 "Visitor Experience and Resource Protection Framework in the National Park System: Rationale, Current Status, and Future Direction" In: McCool, Stephen F. and Cole, David N., compilers. *Proceedings – Limits of Acceptable Change and related planning processes: progress and future directions*; 1997 May 20-22; Missoula, NT. Gen.Tech.Rep.INT-GTR-317. Ogden, UT:US Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Hoffman, C. F.

1866 Plat of Yosemite Valley (Map). Yosemite National Park Museum Collection.

Hollis, D. M.

1996 Acoustic relationship of the California toad, Bufo boreas halophilus and the Yosemite toad, Bufo canorus: vocalization and its role in natural hybridization. *Am. Zool.*, 36(5):93A.

Hubbard, F. and C. F. Brockman

1961 Ice Cones and Frazil Ice. *Yosemite Nature Notes,* 40(2): 16-18.

Huber, N. K.

1989 *The Geologic Story of Yosemite National Park.* Yosemite: Yosemite Association.

Hull, Kathleen L. and Michael S. Kelly

1995 *An Archeological Inventory of Yosemite Valley, Yosemite National Park, California.* Yosemite Research Center Publications in Anthropology, No. 15. Submitted to National Park Service, Yosemite National Park.

Hull, Kathleen L. and Michael J. Moratto

1999 *Archeological Synthesis and Research Design, Yosemite National Park, California.* Yosemite Research Center Publications in Anthropology No. 21. Submitted to National Park Service, Yosemite National Park.

Institute For Decision Innovations, Inc., The

1996 *Choosing by Advantages.* North Ogden, UT: Decision Innovations.

Interagency Wild and Scenic Rivers Coordinating Council (IWSRCC)

1999 *Wild and Scenic Rivers Reference Guide.* Joint document produced by Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and the U.S. Forest Service. Continually revised online. URL: http:\\www.nps.gov/rweis/publications.html.

Jenkins, H. O.

1948 "A population study of the meadow mice (*Microtus*) in three Sierra Nevada meadows." In *Proceedings of the California Academy of Sciences*, 4th series, 26(3):43-67.

Jennings, M. R.

1994 "Status of amphibians." In *Sierra Nevada Ecosystem Project, Vol. 2,* 921-944. Davis, CA: University of California.

Keay, J. A.

1995 Black bear reproductive rates in Yosemite National Park. *California Fish and Game*; 81(3): 122-131.

Keay, J. A. and J. W. van Wagtendonk

1983 "Effect of Yosemite backcountry use levels on incidents with black bears." In *Fifth Int. Conf. Bear Res. Manage,* edited by E.C. Meslow, 307-311.

Keay, J. A. and M. G. Webb
1989 "Effectiveness of human-bear management at protecting visitors and property in Yosemite National Park." In *Bear-People Conflicts: Proceedings of a Symposium on Management Strategies,* edited by M. Bromley,145-154.

Kimley-Horn and Associates
1985 *Traffic Engineering Safety Improvement Study, Yosemite National Park, Appendices.* Prepared for the National Park Service.

Klein, R., R. Sonnevil, and D. Short
1987 "Stream Channel Responses to the Removal of Large Wood Debris, Larry Dam Creek, Northwestern California." In *Erosion and Sedimentation in the Pacific Rim,* edited by R. L. Beschta. International Assoc. of Hydrological Sciences.

Kleinfelder, Inc.
1998 *Wetlands Delineation Report Campground Redevelopment Project Yosemite National Park, California,* Kleinfelder Job No. 21-5102-02-A01. Prepared for the National Park Service.

Knapp, R. A.
2003 Yosemite Lake Survey, 2000-2002, Final Report to the National Park Service. Sierra Nevada Aquatic Research Laboratory, U.C. Santa Barbara. June 1.

Knight, S. K. and D. N. Cole.
1991 "Effects of Recreational Activity on Wildlife in Wildlands." In *Trans. 56th N. A. Wildl. and Nat. Res. Conf.*: 238-247.

Knight, R. L. and K. J. Gutzwiller
1995 *Wildlife and Recreationists, Coexistence through Management and Research.* Covello, CA: Island Press.

Kondolf, G. M., J. C. Vick, and T. M. Ramirez
1996 Salmon spawning habitat rehabilitation on the Merced River, California: An evaluation of project planning and performance. *Transactions of the American Fisheries Society,* 125(6): 899-912.

Laymon, S.A.
1987 Brown-headed cowbirds in California: historical perspectives and management opportunities in riparian habitats. *Western Birds,* 18(1): 63-70.

Leigh, Scott & Cleary, Inc.
1991 *Yosemite Transportation Study*, LSC #8900730.Prepared for the National Park Service.

Leung, Yu-Fai and Jeffrey L. Marion

2000 "Recreation impacts and management in wilderness: A state-of-knowledge review." In: *Cole, D.N. and others (eds.), Proceedings: Wilderness science in a time of change conference.* Vol. 5: Wilderness ecosystems, threats and management; 1999 May 23-27; Missoula, MT. Proceedings RMRS-P-15-VOL-5. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Lundquist, Susan Scott and Glenn E. Haas, compilers.

1999 *1999 Congress on Recreation and Resource Capacity Book of Abstracts. Nov. 29-Dec.2.*

Manning, Robert, Ben Wong, William Valliere and Steve Lawson

1999a *Carrying Capacity for Yosemite Valley: Phase I Study*. School of Natural Resources, University of Vermont.

1999b *Carrying Capacity Research for Yosemite Valley: Phase II Study (with Peter Newman).* School of Natural Resources, University of Vermont.

Marion, Jeffrey L.

1998 "Recreation ecology research findings: Implications for wilderness and park managers." In: *Proceedings of the National Outdoor Ethics Conference*, April 18-21, 1996, St. Louis, MO. Gaithersburg, MD: Izaak Walton League of America. Pp. 188-196.

Mariposa County Planning Commission

1991 *Wawona Town Planning Area Specific Plan - Land Use Policies and Standards Element.*

Mariposa County Planning Department

1987 Wawona Town Planning Area Specific Plan — Land Use Policies and Standards Element. Final Environmental Impact Report. Adopted October 13, 1987. Current as of September 2001.

Mayer, K. E. and W. F. Laudenslayer, Jr. (ed.)

1988 *A guide to wildlife habitats in California*. Sacramento, CA: California Department of Forestry and Fire Protection.

McCool, S. F.; D. N. Cole, compilers

1997 *Proceedings—Limits of Acceptable Change and related planning processes: progress and future directions*; 1997 May 20-22; Missoula, MT. Gen. Tech. Rep. INT-GTR-371. Ogden, UT: U. S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 84 pp.

McCool, Stephen F. and George Stankey

1999 "Managing Access to Wilderness Resources: An American Perspective." In: Lundquist, Susan Scott and Glenn E. Haas, compilers. *1999 Congress on Recreation and Resource Capacity Book of Abstracts*. Nov. 29-Dec.2, 1999.

McNutt, S., W. Bryant, and R. Wilson

1991 Mono Lake Earthquake of October 23, 1990, *California Geology* 44(2):27-32.

Medema, Tom

2004 Personal communication between Tom Medema, Branch Chief of Field Operations (interpretation) and Elexis Mayer, NewFields International. October 2004.

Medley, S. P.

1997 *The Complete Guidebook to Yosemite National Park*. Yosemite: Yosemite Association.

Melack, John M., John L. Stoddard, and Cliff A. Ochs

1985 Major Ion Chemistry and Sensitivity to Acid Precipitation of Sierra Nevada Lakes, *Water Resources Research*, 21(1): 27-32.

Merced Canyon Committee

1987 *Comments of the Merced Canyon Committee Regarding the Sierra National Forest Draft Land and Resource Management Plan.*

Merriam, C. Hart

1898 Life zones and crop zones of the United States. *USDA Div. Biol. Surv. Bull.*, No. 10. Washington D.C.

1976 *Indian Village and Camp Sites in Yosemite Valley. In A Collection of Ethnographic Articles on the California Indians*, edited by Robert F. Heizer, pp. 47-53. Ballena Press Publications in Archaeology, Ethnology and History 7, Ramona, Calif. Originally published 1917, *Sierra Club Bulletin* 10:202-209.

Michael, C. W. and E. Michael

1922 An adventure with a pair of harlequin ducks in the Yosemite Valley. *Auk* 39:14-23.

Micro IMPLAN Group

1996 *Input-Output System B IMPLAN*, as compiled by George Goldman, Department of Agricultural and Resource Economics, University of California, Berkeley.

Milestone, James F.

1978 *The Influence of Modern Man on the Stream System of Yosemite Valley*. MA Thesis, San Francisco State University.

Millar, C. I., M. Barbour, D. L. Elliott-Fisk, J. R. Shevock, and W. B. Woolfenden

1996 "Significant natural areas." In *Sierra Nevada Ecosystem Project, Vol. Two*, 839-853. Davis, CA: University of California.

Mitsch, William, and James G. Gooselink

1986 *Wetlands*. New York: Van Nostrand Reinhold Company.

Morton, M. L.

1981 Seasonal changes in total body lipid and liver weight in the Yosemite toad. *Copeia*, 1981(1):234-238.

1982 Natural history of the Yosemite toad. *Natl. Geogr. Soc. Res. Rep.* 14:499-503.

Moyle, P. B., R. M. Yoshiyama, and R. A. Knapp

1996 Status of Fish and Fisheries. In *Sierra Nevada Ecosystem Project*: Final report to Congress, Vol. Two, chap. 33. Davis: University of California, Centers for Water and Wildland Resources.

Muir, J.

1872 Yosemite Valley in Flood. *The Overland Monthly,* 8(4):347-350.

Murphy, M. L. and W. R. Meehan

1997 "Stream ecosystems." In *Influences of Forest and Rangeland Management on Salmonid Fishes and their Habitats*, 19:17-46. Bethesda, MD: American Fisheries Society.

Napton, L. Kyle and Elizabeth Ann Greathouse

1974a *Archeological Survey in Yosemite National Park, California: El Portal and Cascades. CSCS/IAR.* Submitted to National Park Service. Tucson, AZ: Western Archeological and Conservation Center.

1974b *Archeological Survey in Yosemite National Park, California: Wawona. CSCS/IAR.* Submitted to National Park Service. Tucson, AZ: Western Archeological and Conservation Center.

1974c *Archeological Survey in Yosemite National Park, California: Yosemite Valley* (Parts 1-2). CSCS/IAR. Submitted to National Park Service. Tucson, AZ: Western Archeological and Conservation Center.

National Park Service (NPS), U.S. Department of the Interior

n.d. *Yosemite Pioneer History Center.*

1967-1993 *Station/Parameter Period of Record Tabulation.*

1973 *Wilderness Zones and Visitor Quotas.* U.S. Department of Interior, Yosemite National Park.

1977 N*atural Resources Management Plan for Yosemite National Park.* National Park Service, Yosemite National Park, California.

1978-1979 Water Quality Sampling Records.

1978 *Draft Environmental Impact Statement, General Management Plan, Yosemite National Park*, August.

1979a *Cultural Resources Management Plan of the Yosemite National Park General Management Plan.*

1979b Official Land Use District Map, Section 35, Wawona, Yosemite National Park.

1980a *General Management Plan/Final Environmental Impact Statement,* Yosemite National Park.

1980b *General Management Plan/Visitor Use/Park Operations/Development*, Yosemite National Park.

1981 *Stock Use Plan.* Yosemite National Park. May.

1983 *Determination of Carrying Capacities for the Yosemite Wilderness* by Jan van Wagtendonk.

1985a NPS-19, Appendix A (Records Management Index).

1985b Traffic Control Plan.

1985c 1985 NPS rare plant survey GIS data. Information sent to Environmental Science Associates by Peggy Moore, USGS.

1986 Memorandum of Agreement Regarding Demolition, Relocation, and/or Rehabilitation of All Components of the Merced River Hydroelectric Generating System (Hydro System), Yosemite National Park, California. Agreement among the National Park Service, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation. Document on file, Yosemite National Park, California.

1987a *Wawona Water Conservation Plan*, Yosemite National Park.

1987b *Yosemite, The Park and Its Resources: A History of the Discovery, Management, and Physical Development of Yosemite National Park, California* by Linda W. Greene. 3 vols. Washington, D.C.: National Park Service.

1988a "Management Policies," United States Department of the Interior, National Park Service.

1988b Review of advance copy of report: *Assessment of Hydraulic Changes Associated with Removal of Cascade Dam, Merced River, Yosemite Valley, California*. NPS Denver Service Center, Project No. CA 001-14.

1988c *Traffic Counts and Visitor Survey*. U.S. Department of Interior, National Park Service.

1988d *Wilderness Historic Resource Survey,1988 Season Report* by Jim B. Snyder. Ms. on file, Yosemite Research Library, Yosemite National Park, California.

1989a *Road System Evaluation, Parkwide Road Engineering Study, Yosemite National Park.* May.

1989b *Yosemite Wilderness Management Plan, Yosemite National Park.*

1990a *Fire Management Plan*, Yosemite National Park.

1990b *Preliminary Report on the Merced River (Yosemite Valley) Fish Population Survey in 1990.*

1990c *Wilderness Historic Resource Survey, 1989 Season Report* by Jim B. Snyder. Ms. on file, Yosemite Research Library, Yosemite National Park.

1990d *Yosemite: A Guide to Yosemite National Park, California.* Official National Park Handbook, Division of Publications, National Park Service.

1991a *Analysis of Bank Erosion on the Merced River, Yosemite Valley, Yosemite National Park* by M. Madej, W. Weaver, and D. Hagans. Prepared by Redwood National Park.

1991b *Director's Order 28: Cultural Resource Management Guideline.* National Park Service, Washington D.C.

1991c *Environmental Briefing Statements.* Yosemite National Park.

1991d *Highways in Harmony – Yosemite Roads and Bridges.* Brochure. USDOI/NPS.

1991e *Natural Resources Management Guidelines. NPS-77.* Washington, D.C.: USDOI.

1991f *Wawona Town Planning Area Specific Plan – Land Use Policies and Standards Element.*

1991g *Water Resources Division 1990 Annual Report.* Natural Resources Report NPS/NRWRD/NR-91/01. Washington, D.C.: USDOI/NPS.

1991h *1991 Merced River Angler Survey*, Yosemite Valley.

1992a *Concession Service Plan Environmental Impact Statement, Yosemite National Park, California*, August.

1992b *Land Protection Plan* (Draft), Yosemite National Park. July.

1992c *Prediction of the Effects of Restoration of the El Capitan Moraine, Yosemite National Park* by G. M. Smillie, W. L. Jackson and M. Martin. Technical Report NPS/NRWRD/NRTR-92/10. Washington, D.C.: National Park Service.

1992d *Sustainable Design: A Collaborative National Park Service Initiative.* Denver, CO: NPS.

1993a *Aircraft Overflight Sound Level Study*, Yosemite National Park, August.

1993b *Floodplain Management Guidelines.* Special Directive 93-4. Washington, D.C.

1993c *Resources Management Plan*, Yosemite National Park.

1993d White Paper: *Yosemite Valley Bridge Analysis.* Yosemite National Park.

1993e *Wilderness Permit Statistics.* Yosemite National Park.

1993f *Yosemite Fact Sheet.* U.S. Department of the Interior.

1993g *Yosemite National Park Standard Operating Procedure: Ending Removal of Fallen Trees from the Merced River, Yosemite Valley.* Yosemite National Park.

1994a *Alternative Transportation Modes Feasibility Study, Volume IV.* Prepared by BRW, Inc., in association with Dames & Moore.

1994b *NPS-28, Cultural Resources Management Guideline*, Release Number 4.Washington, D.C.: National Park Service.

1994c *1994 Day Use Survey.* Yosemite Valley trailheads and the Half Dome trail. Wilderness Office, Yosemite National Park.

1994d 1994 *Yosemite Valley Vegetation Map Analysis.*

1994e *The Plant Communities of Yosemite Valley – A Map and Descriptive Key.* Technical Report NPS/WRUC/NRTR 94-01 by Lisa Acree. Davis, CA: CNPSU/NPS.

1994f *Report to Congress. Report on Effects of Aircraft Overflights on the National Park System*, September. National Park Service.

1994g *Statement for Management.* Draft of April 1994. Yosemite National Park.

1994h Water Resources Division and Servicewide Inventory and Monitoring Program. *Baseline Water Quality Data Inventory and Analysis*, Yosemite National Park. Technical Report, NPS/NRWRD/NRTR-94-03, September.

1994i *Yosemite Valley Cultural Landscape Report, Volumes 1 and 2*, Yosemite National Park. October.

1995a *Bear Management Brainstorming Session.*

1995b *Great All-American Secci Dip in Tenaya Lake.*

1995c *Threatened, Endangered, and Sensitive Species, Yosemite National Park, California.* Species list.

1995d *Wilderness Historic Resource Survey Reports, 1990-1995* by Jim B. Snyder. Ms. on file, Yosemite Research Library, Yosemite National Park.

1995e *Visitor Experience and Resource Protection Implementation Plan* Arches National Park, June 1995.

1996-1999 *Monthly Public Use Reports, Form 10-157.* January 1996-June 1999.

1996a *California Rivers Assessment. Professional Judgment Assessment.*

1996b *Draft Addendum/Supplement to the Final Environmental Impact Statement for the General Management Plan, Yosemite Valley Housing Plan, Yosemite National Park, California*, August.

1996c *Elwha River Ecosystem Restoration Implementation Draft Environmental Impact Statement.* Olympic National Park, WA: National Park Service.

1996d *Merced River Restoration, Yosemite Valley, 1991-1995* by Elizabeth Tucker. Yosemite National Park.

1996e *Yosemite Transportation Symposium: A Modes Analysis.* Yosemite National Park.

1996f *Park Traffic Management Plan* (Draft).

1996g *Policy Guideline for Interpretive Services Yosemite National Park* - 11/4/96.

1996h *Wind Emergency Plan – Valley District.* Yosemite National Park.

1997a Agreement between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities.

1997b *Analysis of the Hydrologic, Hydraulic, and Geomorphic Attributes of the Yosemite Valley Flood: January 1-3, 1997* by William Jackson, Gary Smillie, and Michael Martin. Technical Report NPS/NRWRD/NRTR-97/129. Fort Collins, CO: NPS, Water Resources Division.

1997c *Annual Interpretive Program Reports.* 1991, 1993-1997.

1997d *Channel Changes in the Merced River Following the January 1997 Flood* by Mary Ann Madej, Vicki Ozaki, Carrie Jones, and Gregory Gibbs.

1997e *Comments on the Yosemite Valley Housing Plan.*

1997f *Development Concept Plan/Environmental Assessment: Yosemite Lodge Developed Area.*

1997g *Draft Yosemite Valley Implementation Plan/Supplemental Environmental Impact Statement.* USDOI/National Park Service.

1997h *Editing Reference Manual, Denver Service Center.*

1997i *EFRO Report, Yosemite National Park, Highwater 97*, April.

1997j *El Portal Road Improvements. Environmental Assessment.* Prepared by Volpe National Transportation Systems Center.

1997k *Flood Emergency Response and Evacuation Plan for El Portal. Highwater 97A Incident.* Yosemite National Park.

1997l *Flood Emergency Response and Evacuation Plan for Yosemite Valley.* Yosemite National Park.

1997m *The Merced Canyon Travel Corridor, Yosemite National Park, California: A Determination of Eligibility for listing on The National Register of Historic Places.* Prepared by VOLPE National Transportation Systems Center, submitted to NPS, Yosemite National Park.

1997n *Missouri/Niobrara/Verdigre Creek Final General Management Plan Environmental Impact Statement.* National Recreational Rivers, National Park Service.

1997o *Saint Croix Draft General Management Plan and Environmental Assessment.* National Scenic Riverway, National Park Service.

1997p *Vegetation Management Plan,* Yosemite National Park, June.

1997q *Visitor Experience and Resource Protection (VERP) Framework: A Handbook for Planners and Managers.* USDOI, NPS, DSC.

1997r *Yosemite National Park Human-Bear Management Plan.* Yosemite, CA: National Park Service.

1997s *Yosemite National Park Planning Update.* Volume 3, Winter 1997.

1997t *Yosemite National Park Planning Update,* Volume 4, Spring 1997.

1997u *Yosemite Official Map & Guide.* Government Printing Office.

1997v Draft El Portal History Project by Norma Craig. Ms. on file Yosemite Archeology Office, Yosemite National Park.

1997w *Biological Assessment – El Portal Road Improvements*

1997x *Applying the Visitor Experience Resource Protection Process to Acadia National Park Carriage Roads: A Summary of Research and Decision-Making.* Acadia National Park Natural Resources Report Number 97-10. Charles Jacobi, Recreation Specialist, Acadia National Park, and Dr. Robert Manning, University of Vermont, December.

1998a *Biological Assessment on the Valley Elderberry Longhorn Beetle and the California Red-legged Frog for the Yosemite Valley Housing Plan Draft Addendum/Supplement to the Final Environmental Impact Statement for the General Management Plan.*

1998b *Determination of Eligibility: Yosemite Valley Cultural Landscape Historic District* by Cathy Gilbert and Ethan Carr. Draft Ms. on file, Yosemite Research Center, Yosemite National Park.

1998c *Director's Order 2: Park Planning.*

1998d *Evaluation of Historical Significance and Integrity of the Cultural Resources in El Portal Administrative Site, Yosemite National Park, California: Determination of Eligibility for Listing in the National Register of Historic Places.* Prepared by Harlan Unrau.

1998e List of Classified Structures. National Park Service, Pacific West Regional Office, San Francisco.

1998f Meeting Notes from Merced River Management Meeting, May 20, 1998.

1998g *Procedural Manual 77-1: Wetland Protection.* Technical Report NPS/NRWRD/NRTR-98-203.

1998h *Root Rot Management Notes.* Meeting minutes, May 15.

1998i WAA Sites (Table and Map).

1998j White Paper: *Cascade Dam.*

1998k *Yosemite Falls Corridor Project Environmental Assessment.* Prepared by Environmental Science Associates, June.

1998l *Yosemite National Park 1998 Visitor Survey Card Data Report*, Report #YOSE398. University of Idaho Cooperative Park Studies Unit.

1998m *Director's Order 28: Cultural Resource Management Guideline.* National Park Service, Washington, D.C.

1999a *Campground Statistics, 1996-1998.*

1999b Yosemite National Park, Compendium of Superintendents Orders, Code of Federal Regulations, Title 36, Chapter 1. August 1.

1999c *Comprehensive Management Plan Merced Wild and Scenic River, Assumptions and Options.*

1999d *Director's Order 12: Conservation Planning and Environmental Impact Analysis.*

1999e Electronic mail message from Amy Dirksen, NPS, Yosemite to Tina Ogawa, ESA, San Francisco, October 21.

1999f "Extension of Public Scoping Comment Period for Merced Wild and Scenic River Management Plan, Yosemite National Park, Mariposa and Madera Counties, California." *Federal Register*, 64(141): 40037-40038.

1999g Internal writeup *What is a CMP for a WSR?* (2 pages).

1999h *Long Range Interpretive Plan, Draft.* Yosemite National Park. Division of Interpretation Files.

1999i Memorandum from Bonnie Schwartz, Office of Special Park Uses, Yosemite to Amy Schneckenburger, National Park Service, August 17.

1999j Memorandum regarding Guidelines for Participation in the Transportation Fringe Benefit Program from the Acting Regional Director, September 2.

1999k *Merced River Comprehensive Plan, Wilderness Use Statistics, 1997-1999.*

1999l *Merced River Ecosystem Management Plan Outline.*

1999m *Merced Wild and Scenic River Management Plan/Environmental Impact Statement.*

1999n "Notice of Scoping for the Merced Wild and Scenic River Management Plan, Yosemite National Park, Mariposa and Madera Counties, California," *Federal Register*, 64(112):31605-31606.

1999o *Operational Impacts on the Maintenance Division* (VIP).

1999p Personal communication from Mark Butler to Tina Ogawa, November 18.

1999q Personal communication from Steve Thompson, Wildlife Biologist, October 18.

1999r *Public Comments - Comprehensive Management Plan for the Merced Wild and Scenic River.* Prepared for Yosemite National Park by Content Analysis Enterprise Team. Washington D.C.: USDA Forest Service.

1999s *Yosemite Guide*, Summer Edition, 28(2), June 22 - September 6.

1999t *Yosemite National Park Flood Recovery Project Yosemite Lodge Construction Drawings Volume I of II.*

1999u *Yosemite National Park Flood Recovery Project Yosemite Lodge Construction Drawings Volume II of II.*

1999v *Yosemite National Park Partnerships.*

1999w Programmatic Agreement Among the National Park Service at Yosemite, the California State Preservation Officer, and the Advisory Council on Historic Preservation Regarding Planning, Design, Construction, Operations and Maintenance, Yosemite National Park.

2000a *Draft Merced River Plan Comprehensive Management Plan/Environmental Impact Statement, Biological Assessment.*

2000b Glen Rothell, Project Manager. Phone memorandum, May 15.

2000c *Merced Wild and Scenic River Comprehensive Management Plan/Final Environmental Impact Statement.* June.

2000d *Merced Wild and Scenic River Comprehensive Management Plan/Final Environmental Impact Statement Record of Decision.* August.

2000e *Final Yosemite Valley Plan/Supplemental Environmental Impact Statement.* November.

2000f *Management Policies 2001*, United States Department of the Interior, National Park Service. December.

2000g *Director's Order 47: Soundscape Preservation and Noise Management.* URL: http://www.nps.gov/policy/DOrders/DOrder47.html. Accessed December 1.

2000h *Record of Decision, Final Yosemite Valley Plan Supplemental Environmental Impact Statement.* December 29.

2001a *Merced Wild and Scenic River Comprehensive Management Plan*. February 2001.

2002a *Black Bear Activity Report*. Available online at URL: http://www.nps.gov/yose/now/bears.htm. Accessed June 16.

2002b *Air Quality in the National Parks,* Second Edition, Air Resources Division, September.

2003a Data from NPS permanent count locations. Denver Service Center.

2003b Reference Manual RM 47, *Soundscape Preservation and Noise Management*, Draft. March.

2004a *User Capacity Management Program for the Merced Wild and Scenic River Corridor*. United States Department of the Interior. National Park Service. February.

2004b *Fire Management Plan*, Yosemite National Park. August.

2004c *Final Draft. A Sense of Place: Design Guidelines for Yosemite Valley*.

2004d Natural Resources Management Reference Manual 77, Air Resources Management. URL: http://www.nature.nps.gov/rm77/Air.htm. Accessed October 19, 2004.

2004e Visitor reports in commercial tour bus statistics, *Public Use Statistics*. November 10, 2004.

2004f Standard Monthly Public Use Reports for 2004 for Yosemite National Park; National Park Service Public Use Statistics Office. URL: http://www2.nature.nps.gov/mpur/Reports/reportlist.cfm.

2004g Memorandum from Brandon Flint, National Park Service, to Amy Schneckenberger, National Park Service, regarding alternatives summary tables for visitor capacity. December 2004.

2004h Personal communication between Mark Smith, Resource Officer, U.S. Forest Service, Sierra National Forest and Mark Butler, Planning and Compliance Branch Chief, Yosemite National Park. September 10 and 20, and October 18, 2004.

2004i Personal communication between Jim Eicher, Bureau of Land Management, and Mark Butler, Planning and Compliance Branch Chief, Yosemite National Park. September 10, 2004.

2004j Personal communication between Jeff Horn, Bureau of Land Management, and Mark Butler, Planning and Compliance Branch Chief, Yosemite National Park. September 20, 2004.

2004k Personal communication from Lisa Acree, Park Botanist, Yosemite National Park, to Christine O'Rourke Gaber of Environmental Science Associates. October 29, 2004.

2004l 2003 and 2004 rare plant survey GIS data. Information sent from Peggy Moore, USGS, to Christine Gaber, Environmental Science Associates.

2004m Personal communication from Steve Thompson, Yosemite National Park, to Christine O'Rourke Gaber of Environmental Science Associates.

2004n Personal communication between Darell Boyers, National Park Service, and Elexis Mayer, NewFields, regarding Yosemite Valley utility capacities. December 2004.

2004o Personal communication between Ed Chamberlin, National Park Service, and Elexis Mayer, NewFields. October 2004.

2004p Personal communication between Cathy Gilbert, NPS Historical Landscape Architect, and Gretchen Stromberg, NewFields International, Cultural Resources Compliance Specialist. September 17, 2004.

2004q Personal communication between Jeff Horne, Bureau of Land Management, and Elexis Mayer, NewFields, regarding commercial rafting on the Merced River. August 2004.

2004r Personal communication between Graham Hubner, Southern Yosemite Mountain Guides, and Elexis Mayer, NewFields, regarding fly-fishing in the El Portal segment of the Merced River. September 2004.

2004s Personal communication between Vicky McMichael, Delaware North Companies, and Elexis Mayer, NewFields, regarding energy consumption. October 2004.

2004t Personal communication between Diane Mansker, National Park Service, and Elexis Mayer, NewFields, regarding energy consumption. October 2004.

2004u Personal communication between Kim Tucker, National Park Service, and Pat Reilly, Delaware North Companies regarding bicycle and rafting operations. October 2004.

2004v Personal communication between Pat Reilly, Delaware North Companies, and Elexis Mayer, NewFields, regarding energy consumption. November 2004.

2004w Personal communication between Kevin Slieght, Delaware North Companies, and Elexis Mayer, NewFields, regarding Wawona golf course capacity. October 2004.

2004x Personal communication between Stanley Stevens, California Department of Fish and Game, and Elexis Mayer, NewFields, regarding fish stocking in the Merced River. September 2004.

2004y Personal communication between Jim Webb, Delaware North Companies, and Elexis Mayer, NewFields, regarding energy consumption. October 2004.

2004z Personal communication between Jim Whitfield and John Barton, National Park Service, and Elexis Mayer, NewFields, regarding El Portal utility capacities. December 2004.

2004aa Personal communication between Wyly Wood, National Park Service, and Elexis Mayer, NewFields, regarding Wawona utility capacities. December 2004.

2004bb Meeting minutes: User Capacity Alternatives and Purpose and Need Workshop, September 16.

2004cc Memorandum from Maryellen Tuttell, NewFields International, to Jen Nersesian, National Park Service, regarding calculation of annual cap on visitors, January 2005.

2004dd *Park Planning Program Standard.* August.

2005a *The Draft Old El Portal Cultural Landscape Inventory, El Portal, Yosemite National Park.* Prepared by Gretchen Stromberg and Kristen Shive of NewFields International, L.L.C. for Yosemite National Park.

2005b National Park Service Visitation Database Reports, Reports for Yosemite National Park, January 1997 through December 2004, National Park Service Public Use Statistics Office. URL: http://www2.nature.nps.gov/stats. Average total recreational visits. Accessed 4/26/05.

2005c Compilation of YARTS monthly operating statistics for May 2000 through July 2004, NPS Office of Business and Revenue Management.

National Park Service, National Register of Historic Places Nomination Forms for:

- Acting Superintendent's Headquarters
- Arch Rock Retaining Wall and Entrance Sign
- Chris Jorgenson Studio
- El Portal Archeological District
- Galen Clark Homestead
- George Anderson Cabin
- High Sierra Camps
- Hodgdon Homestead Cabin
- John Muir Trail
- LeConte Memorial Lodge
- Merced Lake Ranger Station
- Mist Trail
- The Ahwahnee
- Wawona Archeological District
- Wawona Hotel and Pavilion
- Yosemite Transportation Company Office
- Yosemite Valley Archeological District
- Yosemite Valley Bridges
- Yosemite Valley Historic District
- Yosemite Valley Hydroelectric Power Plant
- Yosemite Village Historic District

National Park Service (NPS) and Office of the Secretary, Interior; Forest Service (USFS) and Office of the Secretary, USDA.

1982 "Wild and Scenic Rivers Guidelines." *Federal Register*, 47(173).

National Research Council (U.S.) Committee on Restoration of Aquatic Ecosystems – Science, Technology and Public Policy

1992 *Restoration of Aquatic Ecosystems—Science, Technology and Public Policy.* Washington, DC: National Academy Press.

Nelson\Nygaard Consulting Associates

1998 *Yosemite Area Regional Transportation Strategy Draft Working Paper #3-3: Year Round Data Collection Summary Report*, November.

Newmark, W. D.

1987 A land-bridge island perspective on mammalian extinctions in western North American parks. *Nature*, 325:430-432.

Nilsen, P. and G. Taylor

1997 A Comparative Analysis of Protected Area Planning and Management Frameworks" In: McCool, Stephen F. and Cole, David N., compilers. *Proceedings – Limits of Acceptable Change and related planning processes: progress and future directions*; 1997 May 20-22; Missoula, MT. Gen. Tech. Rep. INT-GTR-317. Ogden, UT: US Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Norris, R. M. and R. W. Webb

1990 *Geology of California*, New York: John Wiley and Sons, Inc.

Noss, R. F. and A. Y. Cooperrider

1994 *Saving Nature's Legacy - Protecting and Restoring Biodiversity.* Covelo, CA: Island Press.

Noss, R. F. and B. Csuti

1994 "Habitat fragmentation." In *Principles of Conservation Biology,* edited by G. K. Meffe and C. R. Carroll, 237-264. Sunderland, MA: Sinauer Associates.

NPS – see *National Park Service.*

Oakeshott, Gordon B.

1978 *California's Changing Landscapes.* New York: McGraw-Hill.

ORCA Consulting

2000 *Draft Yosemite National Park Visitor Use Study August 1999.* Prepared for National Park Service under contract with BRW, May 8.

Osborne, Michael

1983 *Granite, Water and Light: Waterfalls of the Yosemite Valley.* Yosemite: Yosemite Natural History Association.

Pacific Watershed Associates

1994 *Water Management Quality, Analysis of Bank Erosion on the Merced River.*

Parker, A. J.

1989 Forest/environment relationships in Yosemite National Park, CA. *Vegetation,* 82(1):41-54.

Parker, H. C.

1952 Mammals of Yosemite National Park. *Yosemite Nature Notes*, 31(6): 51-105.

Payne, E. A.

1940 The return of the California gray squirrel. *Yosemite Nature Notes*, 19(1):1-3.

Pierson, E. D. and W. D. Rainey

1993 *Bat surveys: Yosemite Valley and Hetch Hetchy Reservoir*. Prepared for the National Park Service, August.

1995 *Bat Surveys, Yosemite National Park, 1994*. Prepared for the National Park Service, March.

Poole, F.

1949 A note on the squirrels of Yosemite. *Yosemite Nature Notes*, 28(4):28-30.

Quinn, Richard H.

1991 Historic American Engineering Record, All-Year Highway (El Portal Road), Yosemite National Park, HAER No. CA-150. Manuscript on file, Yosemite Research Library, Yosemite National Park.

Richards, L. P.

1958 Some locality records of Yosemite herps. *Yosemite Nature Notes*, 37(9):118-126.

Riley, Lynn M.

1987 *Archeological Investigations in the Merced River Canyon: Report of the 1983 El Portal Archeological Project*. Yosemite Research Center Publications in Anthropology 3, submitted to National Park Service, Yosemite National Park.

Rowell, G.

1976 How Yosemite is solving the bear problem. *Natl. Wildlife*, 14(3):24-29.

Rundel, Philip W. and Shari B. Stuner

1998 Native Plant Diversity in Riparian Communities of the Santa Monica Mountains, California. *Madrono*, 45(2), 93-100.

San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD)

1994 *Ozone Attainment Demonstration Plan*, November.

1997 *PM-10 Attainment Demonstration Plan.*

1998 *California Clean Air Act Triennial Progress Report and Plan Revision,1995-1997*, December.

2001 *California Clean Air Act Triennial Progress Report and Plan Revision 1997-1999*, March 15.

2003 *2003 PM10 Plan*, Adopted in June and Amended in December.

2004 Proposed Extreme Ozone Attainment Demonstration Plan, San Joaquin Valley Air Basin Plan Demonstrating Attainment of Federal 1-Hour Ozone Standards. October 8.

Sargent, Shirley
1988 *Yosemite, The First 100 Years, 1890-1990.* Yosemite: Yosemite Park and Curry Co.

Sasaki Associates Inc., Anderson Mason Dale P.C.
1999 *Project Specifications: Reconstruct Yosemite Lodge, Flood Recovery Project, Package 905/906C.*

Sawyer, J. O. and T. Keeler-Wolf
1995 *A Manual of California Vegetation.* Sacramento: California Native Plant Society.

SCS – see *Soil Conservation Service*

SDA – see *Seventh Day Adventists*

Seventh Day Adventist Church (SDA)
2004 Personal communication between Michelle Coats, SDA and Mark Butler, National Park Service, December.

Sherman, C. K. and M. L. Morton
1993 Population declines of Yosemite toads in the eastern Sierra Nevada of California. *J. Herpetol.*, 27(2):186-198.

Shevock, J.
2004 Personal communication to Christine Graber of Environmental Science Associates. November 15.

SHPO – see *State Historic Preservation Officer.*

SJVUAPCD – see *San Joaquin Valley Unified Air Pollution Control District.*

Soil Conservation Service (SCS), U.S. Department of Agriculture (USDOA)
1992 *Soil Survey of Yosemite National Park, Yosemite Valley Part, California* - Interim Report.

State Historic Preservation Officer (SHPO), National Park Service, and Advisory Council on Historic Preservation
1979 Memorandum of Agreement and associated correspondence.

Stigall, Georgia
1995 *Raft Count & Observations—Sentinel Bridge.* August.

Sydoriak, C. A.
1986a “Yosemite’s wilderness trail and campsite impacts monitoring system.” In *Conf. Sci. Natl. Parks*, 4:205.

Taskey, R.D.

1996 *Soil Handbook for the Soil Survey of Yosemite National Park.* A compilation of work completed at the end of the 1996 field season, December 16.

Todd, P. A.

1989 *The Distribution, Population, Abundance and Habitat Requirements of Sierra Mountain Beaver in Yosemite National Park.* M.S. thesis, University of Montana.

1992 Mountain Beaver Habitat Use and Management Implications in Yosemite National Park. *Natural Areas Journal*, 12(1):26-31.

Trails Illustrated

1996 *Yosemite National Park, CA.* Trails Illustrated/National Geographic Maps No. 206. Evergreen, CO: Trails Illustrated.

Treadwell and Rollo, Inc.

1998 *Progress Report, Yosemite Falls Trail Design, Yosemite National Park, Yosemite, California*, (Letter Report) March 30.

Twining, H.

1940 Foraging behavior and survival in the Sierra Nevada rosy finch. *Condor*, 42(1):64-72.

University of California at Davis (UC Davis)

1996 *Sierra Nevada Ecosystem Project, Final Report to Congress.*
Vol. I: Assessment Summaries and Management Strategies;
Vol. II: Assessments and Scientific Basis for Management Options;
Vol. III: Assessments, Commissioned Reports, and Background Information;
Addendum.

University of California at Riverside

1983a *Alkalinity of Pristine Lakes in the High Sierra Mountains* by M. M. El-Amamy, Carl A. Fox, G. R. Bradford, A. L. Page and S. C. Nodvin. Dept. of Soil and Environmental Sciences. Riverside, CA: University of California.

1983b *Evaluation of Acidity and Chemical Composition of High Elevation Lakes in California* by G. R. Bradford, C. A. Fox, A. L. Page and A. A. Elseewi. Dept. of Soil and Environmental Sciences. Riverside, CA: University of California.

University of Vermont School of Natural Resources

1999 *Carrying Capacity Research for Yosemite Valley: Phase I Study* by Robert Manning, Ben Wang, William Valliere and Steve Lawson. Burlington, VT: Univ. of Vermont.

U.S. Army Corps of Engineers (Corps or USCOE)

1991a Wawona – Floodplain map.

1998a *Removal of Cascade Dam.* Department of the Army Permit No. 199700511.

1998b *Merced River Near Yosemite, California: Hydrology and Hydraulics Technical Reports.* Sacramento District.

U.S. Bureau of the Census

1999 *Population Estimates by County.* Population Estimates Program and the Federal-State Cooperative Program for Population Estimates (ESCPE) Internet release date: March 26.

U.S. Census Bureau

2004 California Quick Facts: URL: http://quickfacts.census.gov/qfd/states. Accessed October 19, 2004.

U.S. Congress

1964 *The Wilderness Act* (Public Law 88-577).

1984 *California Wilderness Act of 1984* (Public Law 98-425 [H.R. 1437]).

U.S. Department of Commerce

2004 Table D-8: Personal Income by County, California 1991-2001. Bureau of Economic Analysis. URL: http://www.bea.doc.gov/. Accessed October 22, 2004.

U.S. Department of Labor, Bureau of Labor Statistics

U.S. District Court, Eastern District of California

1999 *Kattelmann/Sanders Declarations in Support of Sierra Club/MERG v. Bruce Babbitt, et al.*

U.S. Environmental Protection Agency (USEPA)

1993a *Determining Conformity of General Federal Actions to State or Federal Implementation Plans, Final Rule*, November 30.

1993b *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters.*

1996 *Compilation of Air Pollutant Emission Factors*, AP-42, Section 13.1, Wildfires and Prescribed Burning, October

1997 “National Ambient Air Quality Standards for Ozone,” Final Rule, *Federal Register* 62(138): 38855-38896.

1998 *National Air Quality and Emissions Trends Report, 1997*, December.

1999a “Regional Haze Regulations, Final Rule.” *Federal Register* 64(126): 35714-35720.

1999b “Rescinding Findings that the 1-Hour Ozone Standard No Longer Applies in Certain Areas,” Notice to Reopen Comment Period, *Federal Register* 64(235): 68659-68661.

2000 *National Air Quality and Emissions Trends Report, 1998*, March.

2004a Green Book, Currently Designated Nonattainment Areas for All Criteria Pollutants, as of September 27, 2004. URL: http://www.epa.gov/cgi-bin/epaprintonly.cgi. Accessed on October 14.

2004b "Final Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standard – Phase 1," Final Rule, Federal Register 69(84):23951-24000.

U.S. Fish and Wildlife Service (USFWS), U.S. Department of the Interior

1979 *Classification of Wetlands and Deepwater Habitats of the United States* by L. M. Cowardin, V. Carter, F. R. Govet and E. T. LaRoe. FWS/OBS-79/31. Washington, D.C: FWS/DOI.

1992a *Classification of Wetlands and Deepwater Habitats of the United States.* Reprint of the 1979 ed. with minor corrections and additional plates. Washington, D.C.: FWS/DOI.

1992b *Merced River habitat typing, underwater fish observations, and habitat restoration recommendations* by T. T. Kisanuki and T. A. Shaw. Report AFF1-FRO-92-03. Arcata, CA: USFWS/Coastal California Fishery Resource Office.

1995 Draft National Wetland Inventory Maps, Yosemite National Park.

1997 Memorandum from Wayne S. White, Field Supervisor Sacramento, CA to B. J. Griffin, National Park Service, Yosemite, August 15. *Informal Endangered Species Consultation on the Proposed El Portal Road Improvements Project, Yosemite National Park, California.*

1998a *Evaluation of the Effects of Riparian Habitat and Bank Restoration on the Fisheries of the Merced River, Yosemite Valley, California* by S. P. Gallagher. Arcata, CA: USFWS.

1998b *Fisheries Related Literature: A Review and Annotated Bibliography for Restoration of the Merced River in Yosemite National Park, California* by John D Williamson. Arcata, CA: USFWS.

1998c *Tenaya Creek Fisheries Habitat Survey, Yosemite National Park* by S. P. Gallagher. Arcata, CA: USFWS.

1999a *Fish and Large Wood Density at Restoration and Control Sites in the Merced River, Yosemite National Park During September 1998* by S. P. Gallagher. Arcata, CA: USFWS.

1999b Memorandum from Chief, Endangered Species Division, Sacramento Fish and Wildlife Office to the Superintendent, Yosemite National Park. *Species List Yosemite National Park.*

2004 Species List for Merced Wild and Scenic River Revised Comprehensive Management Plan and Supplemental Environmental Impact Statement. Letter from Endangered Species Division to M. Butler. October 6.

U.S. Forest Service (USFS), U.S. Department of Agriculture

n.d. "ROS Users Guide." United States Department of Agriculture, U.S. Forest Service.

1979 *Tuolumne Wild and Scenic River Study Final Environmental Impact Statement and Study Report.* San Francisco, CA: USDA Forest Service and USDOI National Park Service.

1980 *California Wildlife and Their Habitats: Western Sierra Nevada* by J. Verner and A. S. Boss. General Technical Report PSW-37. Berkeley, CA: Pacific Southwest Forest and Range Experimental Station.

1990 *Salmonid-Habitat Relationships in the Western United States: A Review and Indexed Bibliography* by M. D. Marcus, M. K. Young, M. K. Noel and B. A. Mullan. General Technical Report RM-188. Fort Collins, CO: Rocky Mountain Forest and Range Experiment Station.

1991 *Implementation Plan. Kings River Special Management Area.* USDA Forest Service, Pacific Southwest Region.

1993 *Trampling effects on mountain vegetation in Washington, Colorado, New Hampshire, and North Carolina* by David N. Cole. Res. Pap. INT-464. Ogden, UT: Intermountain Research Station.

1996 *Managing Roads for Wet Meadow Ecosystem Recovery* by William D. Zeedyk. FHWA-FLP-96-016. Albuquerque, NM: USDA Forest Service, Southwestern Region.

1999a *Analysis of Public Comments, Notice of Scoping for Preparation of a Comprehensive Management Plan and Environmental Impact Statement for the Merced Wild and Scenic River.* Prepared for Yosemite National Park by Content Analysis Enterprise Team. Washington D.C.: USDA Forest Service.

U.S. Forest Service (USFS), U.S. Department of Agriculture, and the Bureau of Land Management (BLM), U.S. Department of the Interior

1989 *South Fork Merced and Merced River Wild and Scenic Rivers Classifications and Boundary Location and Environmental Assessment.*

1991a *South Fork and Merced Wild and Scenic River Final Environmental Impact Statement*, November.

1991b *South Fork and Merced Wild and Scenic River Implementation Plan*, November.

1991c *South Fork and Merced Wild and Scenic River Record of Decision*, November.

USFS – see *U.S. Forest Service*

USFWS – see *U.S. Fish and Wildlife Service*

U.S. Geological Survey (USGS), U.S. Department of the Interior

1976a *Water Quality Study of a Reach of the Merced River in Yosemite National Park and Vicinity, California, April 1973 through September 1974* by R.J. Hoffman, A.E. Dong and G.L. Keefer. Open File Report 76-326. Prepared in cooperation with the National Park Service. Menlo Park, CA: USGS.

1976b *Water Quality Assessment of the Merced River—Headwaters to Mouth.* Planning Document by Ray J. Hoffman. Sacramento, CA: USGS, Water Resources Division.

1982 *Water Quality Assessment of the Merced River, California* by Stephen K. Sorenson. Open File Report 82-450. Prepared in cooperation with the California State Water Resources Control Board.

1989 *Assessment of Hydraulic Changes Associated with removal of Cascade Dam, Merced River, Yosemite Valley, California* by J. C. Blodgett. USGS Open File Report 88-733. Prepared in cooperation with the National Park Service. Sacramento, CA.: USGS.

1990a "Earthquake history, 1769-1989" by William L. Ellsworth. In *The San Andreas Fault System, California,* edited by Robert E. Wallace, 166-167. U.S. Geological Survey Professional Paper 1515. Washington, D.C: USGPO.

1990b "Seismicity, 1980-1986" by David P. Hill, Jerry P. Eaton and Lucile M. Jones. In *The San Andreas Fault System, California*, edited by Robert E. Wallace, 115-151. U.S. Geological Survey Professional Paper 1515. Washington, D.C.: USGPO.

1991 *Water Quality Data for Yosemite National Park, 1981–1983*. Retrieved from NWIS Data Base. USGS, Water Resources Division, California District.

1992a *Rock Falls in Yosemite Valley* by Gerald Wieczorek, James B. Snyder, Christopher S. Alger, and Kathleen A. Issacson. Open File Report 92-387. Reston, VA: USGS.

1992b Topographic maps of the Merced River in the Yosemite National Park area: El Portal, El Capitan, Half Dome, Merced Peak, Mount Lyell, Tenaya Lake, Buckingham Mountain, Wawona, Mariposa Grove. All dated 1992.

1996a *Ground-Water Resources and Water-Supply Alternatives in the Wawona Area of Yosemite National Park, California* by James W. Borchers. U.S. Geological Survey Water-Resources Investigations Report 95-4229. Prepared in cooperation with the National Park Service. Sacramento, CA: USGS.

1996b *USGS Hazard Events of 1996*, from USGS Internet Home page, www. usgs. gov/themes/FS-248-96.

1997a *Conceptual Models of Groundwater Flow and Stream Aquifer Interactions in Yosemite National Park*. Project statement by J. Borchers.

1997b A Framework for Water Resources Management in Yosemite National Park, California, *Environmental Management*, 18(2): 235-250.

1997c *Interannual Distribution and Abundance of Lotic Invertebrates from Five Habitats of the Merced River in Yosemite Valley, Yosemite National Park, 1992–1995* by James Carter and Steven Fend. Open File Report 97-584. Prepared in cooperation with Yosemite National Park, National Park Service. Menlo Park, CA: USGS.

1997d Letter from James Borchers, Hydrologist to Mark Butler, NPS, Yosemite, May 8.

1997e Letter from James Borchers, Hydrologist to Ruth Jacobs, Oregon State University, February 24.

1997f Letter from James Borchers, Hydrologist to Stanley Albright, Superintendent, Yosemite, August 6.

1997g *Monitoring Springs at Biledo Meadow, Sierra National Forest.* Project statement by J. Borchers.

1997h *Monitoring the Deep, Pressurized Aquifer at Wawona, Yosemite National Park.* Project statement by J. Borchers.

1998a *1998 California Hydrologic Data Report- 11264500 Merced River at Happy Isles Bridge, Near Yosemite, CA.* http://www.dcascr.wr.usgs.gov/RTwww/pub/book/11264500.html.

1998b *Rockfall Hazards in Yosemite Valley DOI*, by Gerald Wieczorek, Meghan M. Morrisey, Giulio Iouine, and Jonathan Goos. U.S.G.S. Open File Report 98-467. Reston, VA: USGS.

1999a *Biological, Habitat, and Water Quality Conditions in the Upper Merced River Drainage, Yosemite National Park, California, 1993-1996* by Larry R. Brown and Terry M. Short. Water-Resources Investigations Report 99-4088. In cooperation with the National Park Service Water Resources Division and Yosemite National Park. Sacramento, CA: USGS.

1999b USGS California NWIS-W Data Retrieval network. Historical information for the "Merced R A Pohono Bridge Nr Yosemite Ca" gauging station. http://waterdata.usgs.gov/nwisw/CA/statnum=11266500.

1999c *Rock-fall Potential in the Yosemite Valley, California* by Gerald F. Wieczorek, Megham M. Morrisey, Giulio Iovine, and Jonathan Godt. Open File Report 99-578.

2004a *Historical Rock Falls in Yosemite National Park, California* by Gerald F. Wieczorek and James B. Snyder. Open File Report 03-491.

2004b 2003 and 2004 rare plant survey GIS data. Information sent via email by Peggy Moore to Christine Gaber. November 15.

U.S. President

1994 Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." *Federal Register* 59:7629.

U.S. Secretary of the Interior

1999 Memo from Bruce Babbitt, Secretary of the Interior to Stan Albright, August 4.

van Wagtendonk, Jan W.

1979 "A Conceptual Backcountry Carrying Capacity Model." In *Proceedings of the First Conference on Scientific Research in the National Parks. Vol. 2*, edited by Robert M. Linn, 1033-1038. Washington, D.C.: National Park Service.

1994 "Spatial patterns of lightning strikes and fires in Yosemite National Park." In *Proceedings 12th Conference Fire and Forest Meteorology*, 223-231. Bethesda, MD: Society of American Foresters.

van Wagtendonk, J. W. and S. J. Botti
1984 Modeling behavior of prescribed fires in Yosemite National Park. *Journal of Forestry*, 82(8):479-484.

van Wagtendonk, Jan W. and Paul R. Coho
1986 Trailhead Quotas, Rationing Use to Keep Wilderness Wild. *Journal of Forestry*, 84(11): 22-24.

Wallis, O. L.
1951 Yosemite beavers as of today. *Yosemite Nature Notes,* 30(1):5-9.

Wieczorek, Gerald, S. P. Nishenko and D. J. Varnes
1995 "Analysis of Rockfalls in the Yosemite Valley, California." In *Rock Mechanics Proceedings of the 35th U.S. Symposium,* edited by J. J. Daemen and R. A. Schultz, 85-89. Rotterdam: A. A. Balkema.

Wieczorek, G. F. and Stephen Jaeger
1996 "Triggering Mechanisms and Depositional Rates of Postglacial Slope-Movement Processes in the Yosemite Valley, California." *Geomorphology,* 15:17-31.

Wilderness Society, The
1992 *Yosemite Transportation Strategy.* Washington, D.C.: The Wilderness Society.

Wildman, A. M.
1992 *Effect of Human Activity on Great Grey Owl Hunting Behavior in Yosemite National Park, California.* Technical Report NPS/WRUC/NRTR 92-49. Davis, CA: CNPSU/NPS.

Williamson, R. L., R. Simonsen, D. Spoto, T. Taylor, and G. Olsen
1996 *Yosemite National Park: Upper Merced River Watershed Sanitary Survey.* Prepared for the National Park Service by the Department of Civil Engineering and Applied Mechanics, San Jose State University. January 1.

Williamson, R. L., D. Spoto, R. Simonsen, F. Bravo, J. Hendrickson, and J. O'Keefe
1996 *Yosemite National Park: Wawona Watershed Sanitary Survey.* Prepared for the National Park Service by the Department of Civil Engineering and Applied Mechanics, San Jose State University, January 1.

Wills, Mary H.
1889 *A Winter in California.* Norristown, PA: Morgan R. Wills.

Wuerthner, G.
1994 *Yosemite: A Visitor's Companion.* Mechanicsburg, PA: Stackpole Books.

Yosemite Concession Services
1999 *Yosemite National Park Concession Statistics* prepared for Environmental Science Associates.

Yosemite National Park, Wilderness Management Branch
2004 Table – Yosemite Trailhead/Quotas. Personal communication between Laurel Boyers and, Wilderness Management Branch, and Gretchen Stromberg, NewFields International. September 22.

Zinke, Paul J. and Earl Alexander
1963 *The Soil and Vegetation of Yosemite Valley.* Unpublished manuscript, Yosemite Research Library.

Map Data

All data are in Universal Transverse Mercator, North American Datum 1927, meters.

Data	Source
100-foot contours	Yosemite GIS, U.S. Geological Survey 30-Meter Digital Elevation Model
100-year floodplain, Happy Isles to Housekeeping Camp	Cella Barr and Associates (1998 for Alternatives 2, 3, 4, 5)
100-year floodplain, Yosemite Valley (except Happy Isles to Housekeeping Camp)	U.S. Army Corps of Engineers (1981, rev. 1991 for all alternatives)
100-year floodplain, El Portal Administrative Site	U.S. Army Corps of Engineers (1998 for Alternatives 2, 3, 4, 5; 1987 for Alternative 1)
100-year floodplain, Wawona	U.S. Army Corps of Engineers (1981 for all alternatives)
1997 flood extent	Yosemite GIS
Hydrology	U.S. Geological Survey Digital Line Graphs
Park boundary	U.S. Geological Survey Digital Line Graphs
Roads	U.S. Geological Survey Digital Line Graphs
Trails	U.S. Geological Survey Digital Line Graphs
Wetlands	U.S. Fish and Wildlife Service, National Wetlands Inventory (1995)
Wild and Scenic River boundaries and zones	Yosemite GIS and MIG, Inc.
Yosemite Wilderness boundaries	U.S. Geological Survey Digital Line Graphs

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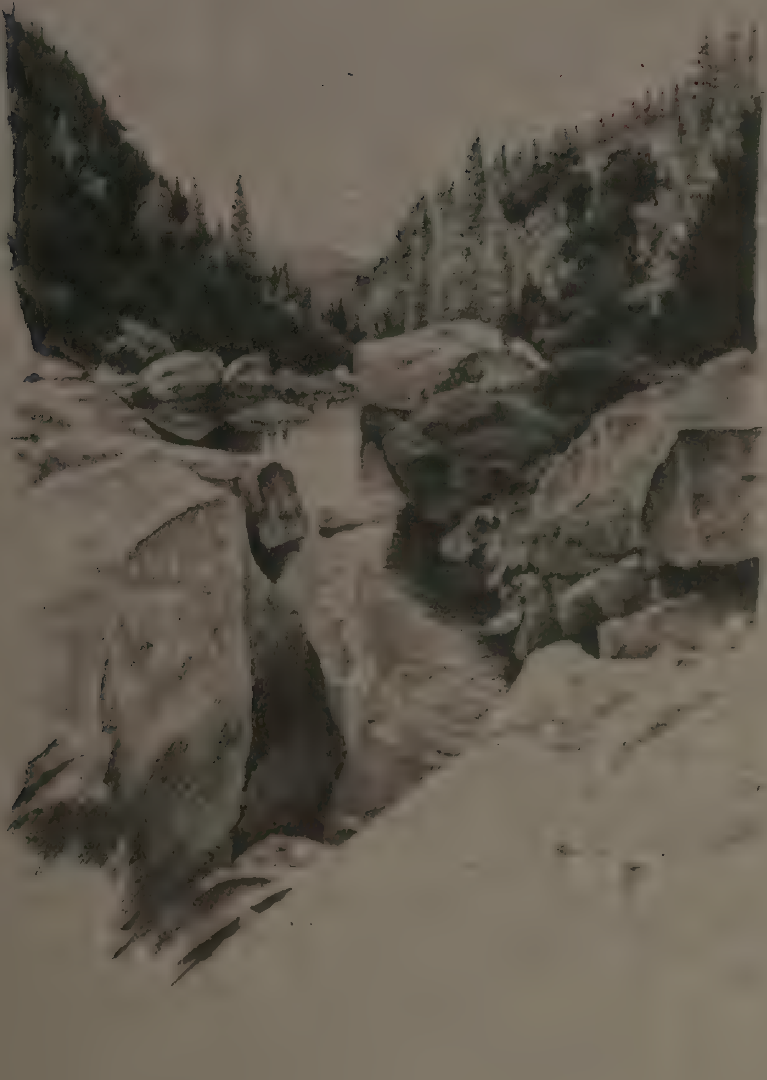
Appendix A

Governing Mandates



Appendix A: Governing Mandates

The National Park Service is directed to address user capacity, resource protection, and public enjoyment of park resources through a number of pieces of legislation, as well as guiding regulations and policies. This appendix briefly describes some of the major laws, regulations, policies, and programs that address user capacity and the protection and enhancement of park resources and visitor experiences.

Wild and Scenic Rivers Act

Section 4(d)(1) of the Wild and Scenic Rivers Act specifies that "For rivers designated on or after January 1, 1986, the Federal agency charged with the administration of each component of the National Wild and Scenic Rivers System shall prepare a comprehensive management plan for such river segment to provide for the protection of the river values. The plan shall address resource protection, development of lands and facilities, user capacities, and other management practices necessary or desirable to achieve the purposes of this Act."

The Merced River Plan, as revised by this document, is the comprehensive management plan for the Merced River. User capacities are addressed through the management elements of the Merced River Plan (such as river classification, Outstandingly Remarkable Values, the River Protection Overlay, and management zoning) and the action alternative selected as a part of this planning process.

Interagency (Secretarial) Guidelines on the Wild and Scenic Rivers Act

The 1982 Interagency Guidelines on the Wild and Scenic Rivers Act (also referred to as Secretarial Guidelines) provide guidelines on the evaluation, classification, and management of rivers designated as Wild and Scenic within the U.S. Departments of Agriculture and the Interior. The section of the guidelines on management of Wild and Scenic Rivers addresses carrying capacity and public use, as well as development of facilities and other management issues. The guidelines define user capacity as "the quantity of recreation use which an area can sustain without adverse impact on the Outstandingly Remarkable Values and free-flowing character of the river area, the quality of recreation experience, and public health and safety." The guidelines also state that each component of the Wild and Scenic Rivers System will be managed to protect and enhance the values for which the river was designated, while providing for public recreation and resource uses that do not adversely impact or degrade those values. Thus, user capacity management is directed to address the quantity and mixture of recreation and other public uses that can be permitted without adverse impacts on the resource values.

Wilderness Act

The Wilderness Act (Public Law 88-577 [16 USC 1131-1136]) originated out of a national concern over trends affecting roadless areas in national forests. It was also applied to lands in the National Park System because of concerns about the erosion of roadless blocks within national park units. The Wilderness Act was a zoning system to establish that certain blocks of land would be maintained permanently as wild lands free of roads, resorts, or other significant humanmade intrusions.

The Wilderness Act supplements the National Park Service's basic statutory authority. It serves as a permanent zoning device, with national legal sanction, determining where roads and structures will not intrude.

A large segment of the Merced Wild and Scenic River flows through designated Wilderness. The Wilderness Act of 1964 and the California Wilderness Act of 1984 provide guidance for management within designated Wilderness. The purpose of the Wilderness Act of 1964 is to secure the benefits of an enduring resource of wilderness for present and future generations. Wilderness is defined in the Act as an area managed to preserve its natural conditions, which is affected primarily by the forces of nature, and which has outstanding opportunities for solitude and an unconfined type of recreation. These goals complement the intent of the Wild and Scenic Rivers Act as it applies to the areas of the Merced River corridor classified as Wild. The California Wilderness Act established 704,624 acres of designated Wilderness and 927 acres of potential Wilderness additions within Yosemite National Park. Most of the Merced River in Yosemite National Park flows through designated Wilderness, which is managed under the 1989 *Wilderness Management Plan*. The Merced River Plan's management approach to wild river segments complements the *Yosemite Wilderness Management Plan*, which includes public use limits for Yosemite's designated Wilderness areas. All of the action alternatives in this document would continue the existing Wilderness Management Program for Yosemite National Park, which includes a trailhead quota system for overnight visitors and a Wilderness Impacts Monitoring System (WIMS) to track and address use-related impacts in wilderness areas, and would supplement these existing programs with a VERP management program.

1978 National Parks and Recreation Act

The 1978 National Parks and Recreation Act (Public Law 95-625) requires all park units to have a general management plan that addresses four items: (1) measures for the preservation of the area's resources, (2) type and intensity of development for public enjoyment, (3) visitor carrying capacity and implementation commitments, and (4) proposed boundary modifications with explanations as to as to why they are required.

The 1980 *General Management Plan* developed visitor capacity goals for developed areas of Yosemite National Park. This Revised Merced River Plan/SEIS will amend and supplement the *General Management Plan* regarding user capacity policies for the Merced River corridor.

16 USC Section 1a-7

This statute requires units within the National Park System to prepare general management plans. In particular, such plans are required to include "indications of types and general intensities of development (including visitor circulation and transportation patterns, systems and modes) associated with public enjoyment and use of the area, including general locations, timing of implementation and anticipated costs." These plans are also required to present "identification of and implementation commitments for visitor carrying capacities for all areas of the unit."

The Merced River Plan amended parts of the park's 1980 *General Management Plan*. How this Revised Merced River Plan/SEIS amends the 1980 *General Management Plan* is summarized at the end of each alternative in *Chapter V: Environmental Consequences*. Elements of each of these plans provide direction for implementation of the user capacity management program for the Merced River corridor.

CFR (Title 36)

The Code of Federal Regulations (CFR) is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government. It is divided into 50 titles that represent broad areas subject to federal regulation. Each volume of the CFR is updated once each calendar year and is issued on a quarterly basis.

Title 36, Chapter 1 part 2 (36 CFR 2) contains the regulations that pertain to resource protection, public use, and recreation within national parks. These regulations "provide for the proper use, management, government, and protection of persons, property, and natural and cultural resources under the jurisdiction of the National Park Service. These regulations will be utilized to fulfill the statutory purposes of units of the National Park System: to conserve scenery, natural and historic objects, and wildlife, and to provide for the enjoyment of those same resources in a manner that will leave them unimpaired for the enjoyment of future generations."

36 CFR 2 establishes protection measures for natural and cultural resources (e.g., food storage, wildlife protection, preservation of archeological resources, etc.) and dictates the allowed public uses within a national park (e.g., campfires, picnicking, winter activities, livestock use, special events, etc.).

Regulations pertaining to the El Portal Administrative Site are specifically contained within 36 CFR 34.

The regulations in 36 CFR will be used by the National Park Service as one of the tools to manage and restrict visitor use within the 81 miles of the Merced River corridor in Yosemite National Park.

National Park Service Management Policies

The National Park Service has several sources of detailed written guidance to help managers make day-to-day decisions. The primary source of guidance is the 2001 edition of *Management Policies*. The issue of user capacities is addressed in Chapter 8: Use of Parks. In particular, it states:

> **8.2.1 Visitor Carrying Capacity** Visitor carrying capacity is the type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions in the park. By identifying and staying within carrying capacities, superintendents can prevent park uses that may unacceptably impact the resources and values for which the parks were established. For all zones, districts, or other logical management divisions within a park, superintendents will identify visitor carrying capacities for managing public use. Superintendents will also identify ways to monitor for, and address, unacceptable impacts to park resources and visitor experiences.
>
> When making decisions about carrying capacity, superintendents must utilize the best available natural and social science and other information, and maintain a comprehensive

> administrative record relating to their decisions. The decision making process should be based on desired resource conditions and visitor experiences for the area; quality indicators and standards that define the desired resource conditions and visitor experiences; and other factors that will lead to logical conclusions and the protection of park resources and values. The level of analysis necessary to make decisions about carrying capacities is commensurate with the potential impacts or consequences of the decisions. The greater the potential for significant impacts or consequences to park resources and values (or the opportunities to enjoy them), the greater the level of study and analysis needed to support the decisions.
>
> The general management planning process will determine the desired resource and visitor experience conditions that are the foundation for carrying capacity analysis and decision making. If a general management plan is not current or complete, or if more detailed decision-making is required, a carrying capacity planning process, such as the Visitor Experience and Resource Protection (VERP) framework, should be applied in an implementation plan or an amendment to an existing plan. If the time frame for making decisions is insufficient to allow the application of a carrying capacity planning process, then superintendents must make decisions based on the best available scientific and other information. In either case, such planning must be accompanied by appropriate environmental impact analysis, in accordance with Director's Order #12.
>
> As use changes over time, superintendents must continue to decide if management actions are needed to keep use at acceptable and sustainable levels. If indicators and standards have been prescribed for an impact, the acceptable level is the prescribed standard. If indicators and standards do not exist, the superintendent must determine how much impact can be tolerated before management intervention is required.
>
> If and when park uses reach a level at which they must be limited or curtailed, the preferred choice will be to continue uses that best meet the criteria listed in section 8.2 for preferred uses, and to limit or curtail those that least meet those criteria.
>
> *(See Decision-making Requirements to Avoid Impairments 1.4.7; General Management Planning 2.3.1; Carrying Capacity 5.3.1.6; Management of Recreational Use 8.2.2.1. Also see Director's Order #2: Park Planning)*

This management policy also guides the park in ways to manage visitor use:

> **8.2.2 Recreational Activities** The National Park Service will encourage, allow, or not allow recreational activities according to the criteria listed in section 8.2. Examples of recreational activities that may be encouraged or allowed include, but are not limited to, boating, camping, bicycling, fishing, hiking, horseback riding and packing, outdoor sports, picnicking, scuba diving, crosscountry skiing, caving, mountain and rock climbing, and swimming. However, not all of these activities will be appropriate or allowable in all parks; that determination must be made on the basis of park-specific planning. Service-wide regulations addressing aircraft use, off-road bicycling, hang gliding, off-road vehicle use, personal watercraft, and snowmobiling require that special, park-specific regulations be developed before these uses may be allowed in parks.
>
> The Service will monitor new or changing patterns of use or trends in recreational activities, and assess their potential impacts on park resources. A new form of recreational activity will not be allowed within a park until after an environmental analysis has determined that it will not result in unacceptable impacts on park resources. Restrictions placed on recreational uses that have been found to be appropriate will be limited to the minimum necessary to protect park resources and values, and promote visitor safety and enjoyment.

> **8.2.2.1 Management of Recreational Use** Superintendents will develop and implement visitor use management plans and take management actions, as appropriate, to ensure that recreational uses and activities within the park are consistent with its authorizing legislation or proclamation and do not cause unacceptable impacts to park resources or values. Depending on local park needs and circumstances, these plans may be prepared as coordinated activity-specific documents (such as river use plan, backcountry use plan, wilderness management plan, off-road vehicle use plan, winter use plan); as action plan components of a resource management plan or general management plan; or as a single integrated plan that addresses a broad spectrum of recreational activities. Regardless of their format or complexity, visitor use management plans will (1) contain specific, measurable management objectives related to the activity or activities being addressed; (2) be periodically reviewed and updated; and (3) be consistent with the carrying capacity decisions made in the general management plan.
>
> The Service will seek consistency in recreation management policies and procedures on both a Service-wide and interagency basis to the extent practicable. However, because of differences in the enabling legislation and resources of individual parks, and differences in the missions of the Service and other federal agencies, an activity that is entirely appropriate when conducted in one location may be inappropriate when conducted in another. The Service will consider a park's purposes and the effects on park resources and visitors when determining the appropriateness of a specific recreational activity.
>
> Superintendents will consider a wide range of techniques in managing recreational use to avoid adverse impacts on park resources and values, or desired visitor experiences. Examples of appropriate techniques include visitor information and education programs; separation of conflicting uses by time or location; "hardening" sites; modifying maintenance practices; and permit and reservation systems. Superintendents may also use their discretionary authority to impose local restrictions, public use limits, and closures, and designate areas for a specific use or activity (see 36 CFR 1. 5). Any restriction of appropriate recreational uses will be limited to what is necessary to protect park resources and values, to promote visitor safety and enjoyment, or to meet park management needs. To the extent practicable, public use limits established by the Service will be based on the results of scientific research and other available support data. However, an activity will be restricted or prohibited when, in the judgment of the superintendent, its occurrence, continuation, or expansion would (1) violate the criteria listed in section 8. 2, or (2) conflict with the findings of a carrying capacity analysis, and there is no reasonable alternative that would avoid or satisfactorily mitigate the violation or conflict.
>
> *(See Park Planning Processes 2.3; Wilderness Management Planning 6.3.4.2; General Policy 6.4.1; Carrying Capacity 8.2.1; Commercial Visitor Services 8.2.2.2; River Use 8.2.2.3, Backcountry Use 8.2.2.4; fishing 8.2.2.5; Hunting and Trapping 8.2.2.6; Off-road Vehicle Use 8.2.3.1; Snowmobiles 8.2.3.2; Visitor Safety 8.2.5.1; Native American Use 8.5; Special Park Uses 8.6; Collecting Natural Products 8.8. Also see Director's Order #2: Park Planning, and #12: Conservation Planning and Environmental Impact Analysis)*

Guidance from the *Management Policies* will be used by the park in making decisions about when and how to take management actions to address visitor use in the Merced River corridor. For example, this guidance will be used to inform management actions that may grow out of Yosemite's VERP program.

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Appendix B

Mitigation Measures Common to All Alternatives

Appendix B: Mitigation Measures Common to All Alternatives

The National Park Service places a strong emphasis on avoidance, minimization, and mitigation of impacts during development projects in the park. To help ensure that design and implementation of any future development projects protect natural, cultural, and social resources and the quality of the visitor experience, parkwide mitigation measures have been developed. The following section discusses mitigation measures that would occur prior to, during, and after construction of any proposed improvements within the river corridor.

Prior to Construction

- An Oil and Hazardous Materials Spill Prevention, Control, and Countermeasure Plan shall be prepared for all development projects to address hazardous materials storage and spill prevention. The plan shall be submitted for park approval prior to any construction. ***(water quality, soils, wetlands)***
- A Storm Water Pollution Prevention Plan shall be prepared and implemented for construction activities to control surface runoff, reduce erosion, and prevent sedimentation from entering waterbodies during construction. The plan shall be submitted for park approval prior to any construction. ***(water quality, soils)***
- A construction work schedule shall be prepared for all construction projects that minimizes effects on wildlife in adjacent habitats, peaks in visitation, and noise levels at residential housing and visitor lodging areas. ***(wildlife, special-status species, noise, park operations, visitor experience)***
- An Environmental and Cultural Resource Compliance Monitoring Plan shall be prepared for all construction projects to ensure implementation of mitigation measures described in this section. The plan shall identify the frequency and type of monitoring required by qualified natural and cultural resources personnel. The plan shall be submitted for park approval prior to any construction. ***(cultural resources, water quality, air quality, wildlife, vegetation)***
- All construction personnel shall attend an environmental protection briefing prior to working on any construction site in the park. This briefing is designed to familiarize workers with statutory and contractual environmental requirements, and the recognition of and protection measures for archeological sites, sensitive habitats, water resources, and wildlife habitats. ***(water quality, air quality, soils, wetlands, wildlife, vegetation, cultural resources)***
- Protective barriers shall be placed around specified staging areas, trees, plants, root zones, river edges, aquatic habitats, wetlands, sensitive wildlife habitats, cultural resources features, and infrastructure. Barriers shall be installed prior to construction and field inspected by natural and cultural resources personnel to verify proper placement. ***(vegetation, wetlands, cultural resources, wildlife)***
- Qualified cultural resources personnel shall survey and evaluate previously undocumented features and/or historical archeology sites prior to any construction. ***(cultural resources)***
- Associated American Indian tribes shall be consulted when resources to which they attach cultural and religious significance are involved. ***(cultural resources)***
- Aboveground structures shall be sited and designed in conformance with *A Sense of Place: Design Guidelines for Yosemite Valley* (NPS 2004c), which recommends architectural and landscape treatments to maintain the appropriate character for development while

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- Associated American Indian tribes shall be consulted when resources to which they attach cultural and religious significance are involved. ***(cultural resources)***
- Aboveground structures shall be sited and designed in conformance with *A Sense of Place: Design Guidelines for Yosemite Valley* (NPS 2004c), which recommends architectural and landscape treatments to maintain the appropriate character for development while

minimizing adverse effects to landscape features such as topography, views, and vegetation. ***(cultural resources, scenic resources)***

- Imported soils, fills, or aggregates shall be free of deleterious materials. Sources of imported materials shall be submitted for park approval prior to construction. ***(non-native species management, vegetation, soils)***
- A plant condition inventory shall be conducted to identify areas of invasive weed species, aquatic and terrestrial vegetation compositions, traditionally used plant resources, and appropriate native shrubs and ground cover to salvage and reuse. ***(wetlands, non-native species management, vegetation, cultural resources)***
- A Non-native Species Management Plan shall be prepared prior to the commencement of any ground-disturbing activities (including hazard tree removal) that specifies the locations and methods for removing non-native species, prescriptions for monitoring activities after construction, and reporting requirements. The plan shall be submitted for park approval prior to ground-disturbing activities. ***(non-native species management, vegetation)***
- A Revegetation Plan shall be prepared prior to the commencement of any ground-disturbing activities (including hazard tree removal) that prescribes seed collection, plant salvage, revegetation, and post-construction monitoring activities. The park botanist and historic preservation officer shall review the plan to verify compliance with the *Vegetation Management Plan*, *A Sense of Place: Design Guidelines for Yosemite Valley*, and the protection of traditional-use plants. ***(wetlands, non-native species management, vegetation, cultural resources)***
- Preconstruction surveys shall be conducted by a qualified biologist to identify the number, type, and location of special-status bird, bat, and aquatic species within the project area. Structures and habitat that provide hibernacula, nursery colonies, or roosting habitat would remain and other protective measures shall be identified during surveys. ***(special-status species, wildlife)***
- The Underground Services Alert shall be informed by construction personnel 72 hours prior to any ground disturbance to enable National Park Service utilities staff and other appropriate utility services to verify the on-site location and depth (elevation) of existing utilities and services through field survey (potholing). ***(park operations)***
- A Transportation Plan shall be prepared to ensure safe and efficient passenger and vehicle circulation during construction projects. The plan shall determine the sequencing of signage to route visitors around construction areas and to day-use parking and other appropriate locations in the Valley. The plan shall be submitted for park approval prior to any construction. ***(park operations, transportation, visitor experience)***

During Construction

- Yosemite National Park and/or a contractor (as appropriate) shall implement and comply with requirements of the Oil and Hazardous Materials Spill Prevention, Control, and Countermeasure Plan prepared for all construction projects. ***(water quality, soils)***
- Yosemite National Park and/or a contractor (as appropriate) shall implement and comply with operational compliance requirements of the Storm Water Pollution Prevention Plan issued for each project. ***(water quality, soils)***
- Construction activities shall be monitored by qualified natural and cultural resources personnel as outlined in the Environmental and Cultural Resource Compliance Monitoring Plan prepared for each project. ***(cultural resources, water quality, air quality, wildlife, vegetation)***

- Construction waste shall be separated into recyclable materials, green waste, and other debris that shall be placed in refuse containers daily and disposed of weekly. Recycled, toxic-free, and environmentally sensitive materials, equipment, and products shall be used whenever possible. Burning or burying of waste is strictly prohibited. ***(water quality, air quality, soils)***
- Wastewater contaminated with silt, grout, or other by-products from construction activities shall be contained in a holding tank to prevent entry into watercourses or wetlands. ***(water quality, wetlands)***
- Hazardous or flammable chemicals shall be prohibited from storage in the staging area, except for those substances identified in the Oil and Hazardous Materials Spill Prevention, Control, and Countermeasure Plan prepared for all construction projects. Hazardous waste materials shall be immediately removed from project sites in approved containers. ***(water quality, soils)***
- Stationary equipment shall be parked over containment pads designed to trap any leaking oil, fuel, or hydraulic fluids and shall be inspected daily. ***(water quality, soils)***
- Secondary containment shall be required for all equipment operating with fluids. Routine oiling, lubrication, and refueling shall be conducted with secondary containment and is prohibited in watercourses or wetlands at any time. ***(water quality, wetlands, soils)***
- Spill response materials (including absorbent pads, booms, and other materials to contain hazardous material spills) shall be maintained on project sites to ensure rapid response to spills. ***(water quality, soils)***
- Immediate notification of spills to the appropriate agencies shall be required. Any spill release shall be digitally photographed or videotaped as part of response activities. ***(water quality, soils)***
- Disruption of utility service shall require advanced notification to National Park Service, concessioners, and residents prior to planned disruptions. Unexpected interruptions due to construction activities shall promptly be reconnected. ***(park operations, visitor experience)***
- Yosemite National Park and/or a contractor (as appropriate) shall implement and comply with the Non-native Species Management Plan prepared for each project. ***(water quality, soils)***
- All construction tools and equipment entering the park shall be cleaned by means of pressure washing and/or steam cleaning so as to arrive on site free of mud or seed-bearing material. Each piece of equipment shall undergo inspections immediately prior to entering the park. ***(non-native species management, vegetation)***
- Clearing of vegetation and ground disturbance shall be minimized to the greatest extent possible. *(non-native* ***species management, vegetation, cultural resources, water quality, soils)***
- Vegetation salvage, seed collection, and revegetation shall be implemented as defined in the Revegetation Plan. ***(wetlands, vegetation, cultural resources)***
- Topsoil shall be salvaged, segregated during storage, and reused in the proper location and depth. Wetland soils shall be salvaged and reused as fill in wetland areas. Stockpiles of soils infected with fungal pathogens (root rot) must not be moved and reused in noninfected areas of the park. Equipment buckets, tires, and hand tools used in areas containing root rot shall be cleaned prior to removal. ***(wetlands, vegetation, soils)***
- Soil and stump treatment prescriptions shall be executed according to the park's Root Rot Management Guidelines and the park forester. Stumps from excavations shall be disposed of in a legal manner outside of the park boundary. ***(vegetation, soils)***

- Stationary noise sources shall be located as far as possible from sensitive wildlife habitats, as well as residential housing and visitor lodging areas. Construction equipment shall not be left running while standing by. Hydraulic or electric-powered impact tools shall be used when feasible. All on-site work that generates noise levels above 76 decibels at the site boundary shall be done between 8:00 a.m. and 5:00 p.m. ***(noise, air quality, wildlife, park operations, visitor experience)***
- Lockable, bear-proof dumpsters and food storage containers shall be delivered to the construction site for construction crew use. ***(wildlife, bear management)***
- Excavation sites must be monitored or covered to avoid trapping wildlife, and routes of escape for wildlife should be maintained. The construction site shall be inspected daily for appropriate covering and flagging of excavation sites. Each morning the project area shall be inspected for wildlife trapped in excavation pits. A qualified biologist shall be available to inspect excavations before refilling occurs. ***(wildlife)***
- A park employee shall be designated to monitor the worksite daily for proper disposal of waste, wrappers, and food packaging. ***(wildlife, bear management)***
- Site watering and slow truck speeds shall be managed as appropriate to control dust. When hauling dry materials, truck beds shall be securely covered to prevent blowing dust or loss of debris. ***(air quality)***
- A Transportation Plan shall be implemented for construction projects. Appropriate signage shall be located and sequenced during construction activities to ensure safe and efficient traffic and pedestrian circulation. Information about traffic detours and recreational closures shall be provided to visitors as they enter the park at each entrance station. ***(park operations, transportation, visitor experience)***

Post-Construction

- All tools, equipment, barricades, signs, surplus materials, debris, and rubbish shall be removed from the project work limits upon project completion. ***(park operations, vegetation)***
- The success of revegetation efforts shall be monitored. Plant materials used for revegetation shall remain alive and in a healthy, vigorous condition for a period of one year after final acceptance of planting. The project site shall be monitored in accordance with the Non-native Species Management Plan and Revegetation Plan. All plants determined to be in an unhealthy condition shall be replaced. ***(non-native species management, vegetation, cultural resources)***

Appendix C

User Capacity Alternative Assumptions

Appendix C: User Capacity Alternative Assumptions

Appendix C presents detailed assumptions and information sources for the capacity limits provided on tables in the Executive Summary and in Chapter III. These tables were developed by park staff using information on existing facilities, existing use levels, and data from previous planning efforts. Technical edits to the user capacity limits presented in this appendix have been made based upon review of the Draft Revised Merced River Plan/SEIS by park staff; however, the analysis of Environmental Consequences presented in Chapter V has not substantively changed as a result of these technical corrections.

Table C-1
Alternative 1: No Action Alternative

Segment Name	Estimated Daily Visitor Capacity	
ENTIRE CORRIDOR		
Corridorwide	• Average annual park visitation level since 1980 = 3.39 million[a] • Current existing total for overall employee housing within the corridor (does not address existing employee housing deficiencies) = 1,683 beds[b] • Average daily employee commuters into river corridor = 606 people[c]	
MAIN STEM		
Wilderness	Existing Trailhead Quota[d]	1,280
Yosemite Valley	Day visitors:[e]	14,944
	Overnight visitors:[f]	6,285
	Segment maximum total:	21,229
Gorge	Day visitors:[g]	2,446
	Overnight visitors:	0
	Segment maximum total:	2,446
El Portal	Day visitors:[h]	1,083
	Overnight visitors:	0
	Segment maximum total:	1,083
SOUTH FORK		
Wilderness	Existing Trailhead Quota	1,280
Wawona (includes below Wawona and impoundment)	Day visitors:[i]	2,391
	Overnight visitors:[j]	644
	Segment maximum total:	3,035

NOTES:

a Information obtained from NPS Public Use Statistics (NPS 2005b). This information reflects parkwide visitation and is the annual average from 1980 to 2004. Visitation data specifically for the river corridor are not available

b Current housing distribution for the NPS, the primary concessioner and other concessioners includes the following allocation of 1,683 beds: Yosemite Valley – 1,241 beds (NPS – 97; primary concessioner – 1,107; other concessioners – 37); El Portal 290 beds (NPS – 177; primary concessioner – 65, other concessioner – 48); Gorge 7 beds (NPS – 7); and Wawona 145 beds (NPS – 73, primary concessioner – 72) [Sources Personal communication between Brandon Flint (NPS) and Cindy Baker (NPS Housing) and Yolanda Cheley (DNC Housing) and YVP Table 2-9, pg. 2-40].

c In 2004, an average of 606 commuters per day potentially entered the river corridor during peak summer months. This number reflects an increase of 10% to the base number (551 commuters + 55 commuters) to account for other potential park partner commuters entering the river corridor who are not accounted for in the discussion below. The number of NPS and primary concessioner commuters was estimated by determining the difference between the number of NPS and primary concessioner employees working in the corridor (2,459) [1,875 concessioner + 584 NPS Employees (784 park wide total NPS employees – 200 NPS employees working outside the river corridor in Tuolumne Meadows, White Wolf, and Hodgdon Meadows) = 2,459 employees] and the number of NPS and concessioner employees housed in the corridor (354 NPS beds + 1,244 primary concessioner beds + 85 other concessioner beds = 1,683) [2,459 employees – 1,683 employees housed = 776 employees potentially commuting into the corridor]. Due to the weekly distribution of employee work shifts, it is estimated that an average of 71% of employees (5 days / 7 days per week = 0.71) potentially commute each day. Therefore 551 employees could potentially commute into the corridor each day (776 × 0.71 = 551).

d The current Wilderness Trailhead Quota System allows for 1,280 people per night. Only a portion of these wilderness users would be within the Merced River corridor in the Wilderness segments (See Table II-1, Entry/Exit Trailhead Quota, per day).

e Combined average visitation associated with personal vehicles, commercial buses and transit buses in Yosemite Valley is 14,944 people per day (13,666 + 1,278).

The average day use associated with personal vehicles is 13,666 people per day. Specifically, visitation between the hours of 10 a.m. and 4 p.m. represents two-thirds of the total daily visitation (NPS 1980a, Table A-1). Therefore, average visitor use occurring between the hours of 10 a.m. to 4 p.m. equals 9,111 [based on 2,197 parking spaces × (6 hours / 4.2 hour average length of stay = 1.43 cars per space per 6 hours) × 2.9 people per car]. The remaining average daily visitation occurring between 4 p.m. and 10 a.m. is 4,543, which accounts for the remaining one-third of daily visitation (9,111 / 2 = 4,555). [9,111 + 4,555 = 13,666].

Overall, average day use associated with commercial and tour buses is 1,278 persons per day (based on 1,189 commercial bus riders in east Valley + 89 transit bus riders = 1,278). Commercial bus visitor day use (August 2004) is 1,189 people per day for east Valley (based upon 41 buses per day with an average of 29 people per bus). Average visitor day use associated with transit buses is 89 people per day (August 2004).

f Average occupancy of lodging and campsites is 6,285. For lodging: in 1998, the number of visitors estimated to be in overnight lodging units was 4,211 (NPS 2000e, Appendix G, pg. G-2). Of the 4,211 overnight guests 1,064 were at Housekeeping Camp (266 units on average have 4 people per unit) and 3,147 are guests in the 996 rooms at all other lodging facilities (The Ahwahnee @ 123 rooms + Yosemite Lodge @ 245 rooms + Curry Village @ 628 rooms = 996 rooms) which on average have 3.16 per room.

For camping: currently there are 475 campsites in the Valley with an average total capacity of 2,074 people (Upper Pines @ 240 sites with 4 per site = 960 people; Lower Pines @ 76 sites with 4 per site = 304 people, and 2 group sites with 12 per site = 24 people; North Pines @ 86 sites with 4 per site = 344 people; Camp 4 @ 37 sites with 6 per site = 222 people; Backpackers Campground @ 30 sites with 4 per site = 120 people; Yellow Pine Administrative Campground @ 4 sites with 25 per site = 100 people).

g The average visitor use associated with personal vehicles and commercial bus parking facilities in the gorge is 2,446 people per day.

The average personal vehicle visitor day use is 1,518 people per day. Visitation between the hours of 10 a.m. and 4 p.m. represents two-thirds of the total daily visitation (NPS 1980a, Table A-1). Therefore, average visitor use occurring between the hours of 10 a.m. to 4 p.m. equals 1,012 people [based on 244 parking spaces × (6 hours / 4.2 hour average length of stay = 1.43 cars per space per 6 hours) × 2.9 people per car]. The remaining average daily visitation occurring between 4 p.m. and 10 a.m. is 506, which accounts for the remaining one-third of daily visitation (1,012 / 2 = 506). [1,012 + 506 = 1,518].

Average day use associated with commercial buses is 928 people per day (based upon 2 bus parking spaces with 16 buses per space per day and 29 people per bus).

h Average visitor use associated with personal vehicles and commercial rafting operations is 1,083. This was calculated by determining the average number of day users associated with personal vehicle use of 1,044 (360 existing parking spaces [DEA 2004: total westbound SH 140 = 145; eastbound SH 140 = 113; Foresta Road = 86; Redbud launch site = 16] with 1 car per space per day and 2.9 people per car), and the average commercial rafting use of 39 people per day (based on 2004 RIMS data (BLM Folsom) documenting 3,500 users over a 90-day period; 3,500 / 90 = 39 people per day (NPS 2004g).

i Average visitor day use in Wawona associated with personal vehicles, commercial bus parking facilities and day users who enter the corridor from facilities located outside the corridor is 2,391 people per day [1,325 + 812 + 254 = 2,391].

The average personal vehicle visitor day use is 1,325 people per day. Visitation between the hours of 10 a.m. and 4 p.m. represents two-thirds of the total daily visitation (NPS 1980a, Table A-1). Therefore, average visitor use occurring between the hours of 10 a.m. to 4 p.m. equals 883 people per day [based on 213 parking spaces × (6 hours / 4.2 hour average length of stay = 1.43 cars per space per 6 hours) × 2.9 people per car]. The remaining average daily visitation occurring between 4 p.m. and 10 a.m. is 442, which accounts for the remaining one-third of daily visitation (883 / 2 = 442). [883 + 442 = 1,325].

Average day use associated with commercial buses is 812 (28 buses per day with 29 people per bus).

Average day use associated adjacent lodging on non-NPS lands in Wawona is 254 (estimate provided by SDA 2004)

j Based on average occupancy of lodging and campsites. For lodging, the average capacity is 222 people (Wawona Hotel @ 104 rooms at 2.13 people per room. Personal communication between Sue Clark, NPS, and Mike Bruneer, DNC (April 2005) regarding room count and average capacity. For camping, the average capacity is 422 (Wawona Campground @ 98 sites with 4 people per site and 1 group site with 30 people per site).

Table C-2
Alternative 2: Interim Limits on Facilities and Specific Activities

Segment Name	**Interim Limits**
ENTIRE CORRIDOR	
Corridorwide	Interim Limit: 1,969 employee beds[a]
MAIN STEM	
Wilderness	Limited to existing facilities.
Yosemite Valley	Day-visitor parking limited to existing level[b] Interim Limit: 2,197 spaces
	Commercial/noncommercial buses limited/managed to existing parking[c] Interim Limit: 38 bus parking spaces used to manage 92 buses per day in east Valley
	Overnight lodging accommodations limited to existing level[d] Interim Limit: 1,262 units/room
	Camping accommodations may increase[e] Interim Limit: 638 sites
Gorge	Day-visitor parking limited to existing levels[f] Interim Limit: 244 spaces
	Commercial/noncommercial buses limited/managed to existing parking Interim Limit: 2 spaces
El Portal	Day-visitor parking limited to existing level[g] Interim Limit: 360 spaces
SOUTH FORK	
Wilderness	Limited to existing facilities.
Wawona (includes below Wawona and impoundment)	Day-visitor parking limited to existing level[h] Interim Limit: 213 spaces
	Commercial/noncommercial buses limited/managed to existing parking[i] Interim Limit: 14 bus parking spaces used to manage 28 buses per day
	Overnight lodging accommodations limited to existing level[j] Interim Limit: 104 units
	Camping accommodations limited to existing level[k] Interim Limit: 99 sites

NOTES:

[a] Includes beds in Valley, El Portal, Gorge, and Wawona. This interim number is based on the number of employee beds approved in the *General Management Plan* (GMP, 1980 – Visitor Use/Park Operations/ Development; pg. 25; 1,790 with a 10% increase (1,790 x 0.10) = 1,969) proposed employee housing capacities in the Valley, El Portal, and Wawona. Specifically, the *General Management Plan* approved employee beds in Valley (480) + El Portal (880) + Wawona (430). The actual number residents in these areas is higher based on the number of nonemployee residents per employee household (NPS 2000e, Table 1.4). The overall employee housing number was adjusted upward by 10% within corridor to address housing demands associated with changing demographics, operational demands needs and current housing deficiencies.

[b] Current distribution of the 2,197 Valley parking includes spaces in the East Valley (1,510 spaces), and West Valley (687 spaces) (DEA 2005c).

[c] Current number of bus parking spaces in east Yosemite Valley is 38 (per Dave Henderson, NPS Traffic Management, May 2005) used to manage 92 commercial or transit buses per day (estimate based on historic peak high level of commercial bus use in August 1996 and historic peak high of transit bus use in August 2000; these levels reflect what Yosemite Valley currently and historically accommodated).

[d] Interim lodging facility limit based upon existing numbers of rooms at all Yosemite Valley lodging facilities (an itemized analysis can be found in Table C-1, footnote "f")

[e] Interim campsite facility limit of 638 sites is based upon the number of existing and other additional campsites that would be allowed by approved Merced River Plan management zoning. This interim number includes existing camp sites (475) plus the Upper Pines expansion (89 sites), Camp 4 expansion (28 sites), Tenaya Creek Walk-in (20 sites), South Camp walk-in (16 sites), and South Camp Group expansions (10 sites).

[f] Yosemite National Park Parking Inventory (DEA 2005). Includes 244 auto parking spaces.

[g] Yosemite National Park Parking Inventory (DEA 2005). 360 public day-use parking spaces. Includes public day-use parking within the El Portal Administrative Site. Parking inventory does not include residential or employee parking at administrative facilities.

[h] Yosemite National Park Parking Inventory (DEA 2005).

[i] Yosemite National Park Parking Inventory (DEA 2005).

[j] Personal communication between Kim Tucker, NPS and Deborah Price, DNC (December 2004) regarding rooms and occupancy rates for the Wawona Hotel.

[k] Personal communication between Brandon Flint, NPS and Melissa Carter, NPS (November 2004) regarding campground capacity and occupancy rates.

Table C-3
Comparison of GMP Visitor Use and Employee Housing Levels (1980) with Existing Conditions (2004) and GMP Proposed Levels at full implementation

Segment Name	Existing GMP Capacity Levels in 1980[i]	Current Capacity Levels[f] (estimated daily visitor capacity)	Proposed Capacity Levels with Full Implementation of GMP[j]
MAIN STEM			
Wilderness	No visitor or employee levels listed[a]	Existing Trailhead Quota[b]	No visitor or employee levels listed.
Yosemite Valley	Day visitors: 17,340 Overnight visitors: 9,066[g] Segment Total: 26,406	Day visitors: 14,944 Overnight visitors: 6,285 Segment Total: 21,229	Day visitors: 10,530 Overnight visitors: 7,711[h] Segment Total: 18,241
Gorge	Day visitors: 360 Overnight visitors: 0 Segment Total: 360	Day visitors: 2,446 Overnight visitors: 0 Segment Total: 2,446	Day visitors: 360 Overnight visitors: 0 Segment Total: 360
El Portal	Day visitors: 540 Overnight visitors: 0 Segment Total: 540	Day visitors: 1,083 Overnight visitors: 0 Segment Total: 1,083	Day visitors: 765 Overnight visitors: 0 Segment Total: 765
SOUTH FORK			
Wilderness	No visitor or employee levels listed.	No visitor or employee levels listed.	No visitor or employee levels listed.
Wawona (includes impoundment below Wawona)	Day visitors: 1,689 Overnight visitors: 644 Segment Total: 2,333	Day visitors: 2,391 Overnight visitors: 644 Segment Total: 3,035	Day visitors: 1,689 Overnight visitors: 1,622 Segment Total: 3,311
ENTIRE CORRIDOR (All Segments)			
Employees/residents	Existing GMP level: 1,880[c]	Existing Level: 1,683[d]	Proposed GMP Level: 1,790[e]

NOTES

a The *General Management Plan* did not address existing or proposed day use in wilderness and noted that overnight use of wilderness areas would be managed under the established Wilderness Trailhead Quota System

b The current Parkwide Trailhead Quota for the Wilderness segments is 1,280 people per night. Only a portion of these wilderness users would be within the Merced River corridor in the Wilderness segments

c All employee/resident numbers are based on the number of employee beds. Existing *General Management Plan* levels in 1980 represent the total number of beds in the Valley (1,510) + El Portal (190) + Wawona (180) The actual number of residents in these areas is higher based on the number of nonemployee residents per employee household. (NPS 2000e, Table 1.4).

d All employee/resident numbers are based on the number of employee beds Existing employee housing is the total number of beds in the Valley (1,241) + Gorge (7) + El Portal (290) + Wawona (145) The actual number of residents in these areas is higher based on the number of nonemployee residents per employee household.

e All employee/resident numbers are based on the number of employee beds. The *General Management Plan* approved employee beds in Valley (480) + El Portal (880) + Wawona (430). The actual number residents in these areas are higher based on the number of nonemployee residents per employee household (NPS 2000e, Table 1.4).

f See Table C-1 for explanation of all numbers in this column

g In 1980 there were 800 auto, 58 walk-in, and 14 group campsites, and 1,528 lodging units (Source: 1980 GMP FEIS, Table A-6, page 230).

h The GMP proposed at full implementation 684 auto, 58 walk-in, and 14 group campsites; and 1,250 lodging units, resulting in a reduction of 116 auto campsites and 278 lodging units from 1980 levels

i Source *General Management Plan* 1980 Final Environmental Impact Statement Table A-1 for day use assumptions and Table A-6 for overnight accommodation assumptions

j Source *General Management Plan* 1980 Final Environmental Impact Statement Table A-1 for day use assumptions and Table A-6 for overnight accommodation assumptions

Table C-4
Alternative 3: Segment and Corridorwide Limits

Segment Name	Segment Limits (maximum people per day in peak period)	
Entire Corridor	• Annual corridorwide visitation limit 5.32 million visitors[a] • Overall employee housing = 1,969 beds[b] • Average daily employee commuters into river corridor = 606 people[c]	
MAIN STEM		
Wilderness	Existing Trailhead Quota	1,280[d]
	Day use limit to Half Dome	800[e]
Yosemite Valley	Day visitors	16,680[f]
	Overnight visitors	7,699[g]
	Segment maximum total	24,379
Gorge	Day visitors	2,958[h]
	Overnight visitors	0
	Segment maximum total	2,958
El Portal	Day visitors	1,144[i]
	Overnight visitors	0
	Segment maximum total	1,144
SOUTH FORK		
Wilderness	Existing Trailhead Quota	1,280
Wawona (includes below Wawona and the impoundment)	Day visitors	2,839[j]
	Overnight visitors	897[k]
	Segment maximum total	3,736

NOTES:

a The limit of 5.32 million annual visitors in this alternative is based on 0.70 million visitors to the park during the months of June, July and August (0.70 million visitors was based on the annual park attendance for August in 1996 and 1997 as these numbers reflect historic peak monthly attendance since 1980); 0.21 million visitors in January, February and December; 0.28 million visitors in March and November; 0.35 million visitors in April; 0.56 million visitors in May; 0.63 million visitors in September; and 0.49 million visitors in October. Table IV-16 presents monthly visitation from 1980 through 2004.

b The number of employee beds proposed in the *General Management Plan* for the Valley, El Portal, Gorge, and Wawona was increased by 10% to account for current housing deficiencies. (See table C-2, footnote (a) for details).

c In 2004, an average of 606 commuters potentially entered the river corridor per day during peak summer months; however, this number reflects an increase of 10% to the base number (551 commuters + 55 commuters) to account for other potential park partner commuters entering the river corridor that are not accounted for in the discussion to follow.

The number of NPS and primary concessioner commuters was estimated by determining the difference between the number of NPS and primary concessioner employees working in the corridor (2,459) [1,875 concessioner + 584 NPS Employees (784 park wide total NPS employees – 200 NPS employees working outside the river corridor in Tuolumne Meadows, White Wolf, and Hodgdon Meadows) = 2,459 employees] and the number of NPS and primary concessioner employees housed in the corridor (354 NPS beds + 1,244 primary concessioner beds + 85 other concessioner beds = 1,683) [2,459 employees – 1,683 employees housed = 776 employees potentially commuting into the corridor]. Due to the weekly distribution of employee work shifts, it is estimated that an average of 71% of employees (5 days / 7 days per week = 0.71) potentially commute each day. Therefore 551 employees could potentially commute into the corridor each day (776 × 0.71 = 551).

d The current Wilderness Trailhead Quota System allows for1,280 people per night. Wilderness users in the Merced River corridor account for only a portion of the people in the Wilderness segments of the river.

e Based on 2004 estimated current maximum daily use per the Wilderness Management Office.

f Combined visitation associated with average personal vehicle occupancy, maximum peak commercial bus and maximum peak transit bus ridership in Yosemite Valley is 16,680 people per day (13,666 + 2,760 + 254 = 16,680).

The average day use associated with personal vehicles is 13,666 people per day. Visitation between the hours of 10 a.m. and 4 p.m. represents two-thirds of the total daily visitation (NPS, 1980a, Table A-1). Therefore, average visitor use occurring between the hours of 10 a.m. to 4 p.m. equals 9,111 [based on 2,197 parking spaces × (6 hours / 4.2 hour average length of stay = 1.43 cars per space per 6 hours) × 2.9 people per car]. The remaining average daily visitation occurring between 4 p.m. and 10 a.m. is 4,555, which accounts for the remaining one-third of daily visitation (9,111 / 2 = 4,555). [9,111 + 4,555 = 13,666]

Maximum Commercial Bus visitor day use (August 1996) is 2,760 people per day (based upon 80 buses per day with 52 buses @ 45 people and 28 smaller buses @ 15 people per bus). Assumes a maximum of 254 visitors per day on transit (August 2000, 47% of the seats available are occupied by visitors on 12 bus runs per day with 45 seats per bus).

g Based on maximum capacity of lodging facilities and campgrounds is 7,699. For lodging, the maximum visitor use is 4,821 visitors per day (based on Yosemite Lodge, 245 rooms with a total of 1,003 pillows; The Ahwahnee, 123 rooms with a total of 435 pillows; Housekeeping Camp, 266 rooms with 1,124 pillows; Curry Village, 628 rooms with 2,259 pillows).

For camping, the maximum visitor day use is 2,878 visitor per day (based on maximum capacity of Upper Pines, 240 sites with 6 per site = 1,440 people; Lower Pines, 76 sites at 6 per site and 2 group sites with 12 per site = 480 people; North Pines, 86 sites with 6 per site = 516 people; Camp 4, 37 sites with 6 per site = 222 people; Backpackers Campground, 30 sites with 4 per site = 120 people; Yellow Pine Administrative Campground, 4 sites with 25 per site = 100).

h Combined visitor day use in the Gorge associated with average personal vehicles occupancy and maximum commercial bus ridership associated with parking facilities in the Gorge is 2,958 people per day. (1,518 + 1,440 = 2,958)

The average personal vehicle visitor day use is 1,518 people per day. Visitation between the hours of 10 a.m. and 4 p.m. represents two-thirds of the total daily visitation (NPS 1980a, Table A-1). Therefore, average visitor use occurring between the hours of 10 a.m. to 4 p.m. equals 1,012 people [based on 244 parking spaces × (6 hours / 4.2 hour average length of stay = 1.43 cars per space per 6 hours) × 2.9

people per car]. The remaining average daily visitation occurring between 4 p.m. and 10 a.m. is 506, which accounts for the remaining one-third of daily visitation (1,012 / 2 = 506). [1,012 + 506 = 1,518].

Maximum day use associated with commercial buses is 1,440 people per day (based upon 2 bus parking spaces with16 buses per space per day and 45 people per bus).

i Visitor use associated with personal vehicles and commercial rafting operations is 1,144. Visitor use associated with personal vehicles is 1,044 (based on 360 parking spaces with 1 car per space per day (based on a 6-hour design day per the *General Management Plan*) and an occupancy rate of 2.9 people per car). Maximum visitor use associated with commercial rafting operations departing from Red Bud Launch Site is 100 people per day (based on 4 groups launching per day with 25 people per group).

j Combined visitor day use in Wawona associated with personal vehicles, maximum commercial bus ridership associated with parking facilities and day users who enter the corridor from facilities located outside the corridor is 2,839 people per day (1,325 + 1,260 + 254 = 2,839).

The average personal vehicle visitor day use is 1,325 people per day. Visitation between the hours of 10 a.m. and 4 p.m. represents two-thirds of the total daily visitation (NPS 1980a, Table A-1). Therefore, average visitor use occurring between the hours of 10 a.m. to 4 p.m. equals 883 people per day [based on 213 parking spaces × (6 hours / 4.2 hour average length of stay = 1.43 cars per space per 6 hours) × 2.9 people per car]. The remaining average daily visitation occurring between 4 p.m. and 10 a.m. is 442, which accounts for the remaining one-third of daily visitation (883 / 2 = 442). [883 + 442 = 1,325].

Maximum day use associated with commercial buses is 1,260 (28 buses per day with 45 people per bus).

Maximum day use associated adjacent lodging on non-NPS lands in Wawona is 254 (estimate provided by SDA 2004).

k Based on maximum occupancy of lodging and campsites of 897. The maximum capacity of each hotel room (Wawona Hotel @ 104 rooms with 279 pillows) = 279 people. Includes maximum capacity of each campsite (Wawona 98 sites with 6 people per site and 1 group site with 30 people per site) = 618 people.

Table C-5
Alternative 4: Management Zone and Corridorwide Limits

Entire Corridor		Annual Corridorwide Visitation Limit of 3.27 million visitors[a]	
Zone	Zone Description	Management Zone Quota	Potential Management Actions
WILDERNESS ZONES			
1A	Untrailed	Trailhead quota system	Reduce existing trailhead quotas. Increase enforcement.
1B	Trailed Travel	Trailhead quota system	Reduce existing trailhead quotas. Increase enforcement.
1C	Heavy Use Trail	Trailhead quota system	Reduce existing trailhead quotas. Increase enforcement. Require day use permits for hikers through Little Yosemite Valley.
1D	Designated Overnight	Trailhead quota system	Reduce existing trailhead quotas. Increase enforcement. Limit capacity at Merced Lake Sierra High Camp. Reduce or restrict stock use levels.
DIVERSE VISITOR EXPERIENCE ZONES			
2A	Open Space	0.83 to 2.5 PAOT[b] per acre	Limit number of visitors allowed. Require permits for use of these areas. Reduce access by removing parking or trails.
2A+	Open Space – Undeveloped	0.01 PAOT per acre	Limit number of visitors allowed. Require permits for use of these areas. Reduce access by removing parking or trails.
2B	Discovery	0.83 to 2.5 PAOT per acre	Limit number of visitors allowed. Reduce access by removing parking, shuttle access, or trails. Require permits for use of these areas.
2C	Day Use Area	5 to 10 PAOT per acre	Limit number of visitors allowed. Require permits or reservations for use of these areas. Reduce access by removing parking or trails.
2D	Attraction Area	20 to 100 PPV[c]	Limit number of visitors allowed. Require permits or reservations for use of these areas. Reduce access by removing parking or trails.
DEVELOPED ZONES			
3A	Camping	15 to 20 PAOT per acre	Reduce number of people per campsite. Reduce number of campsites.
3B	Visitor Base and Lodging	40 to 50 PAOT per acre	Reduce number of people per room. Reduce number of rooms available.
3C	Park Operations and Administration	25 to 50 PAOT per acre	Reduce employees stationed in zone. Reduce employees residing in zone.

NOTES

Capacity limits vary based on the most appropriate measures for each site. For example, Developed Zones are typically located in areas best suited to high use levels, and capacities in these areas are based on their use as either housing or administrative uses. Areas that are more sensitive to development and use levels are managed more in accordance with U.S. Forest Service capacity estimates for recreation areas.

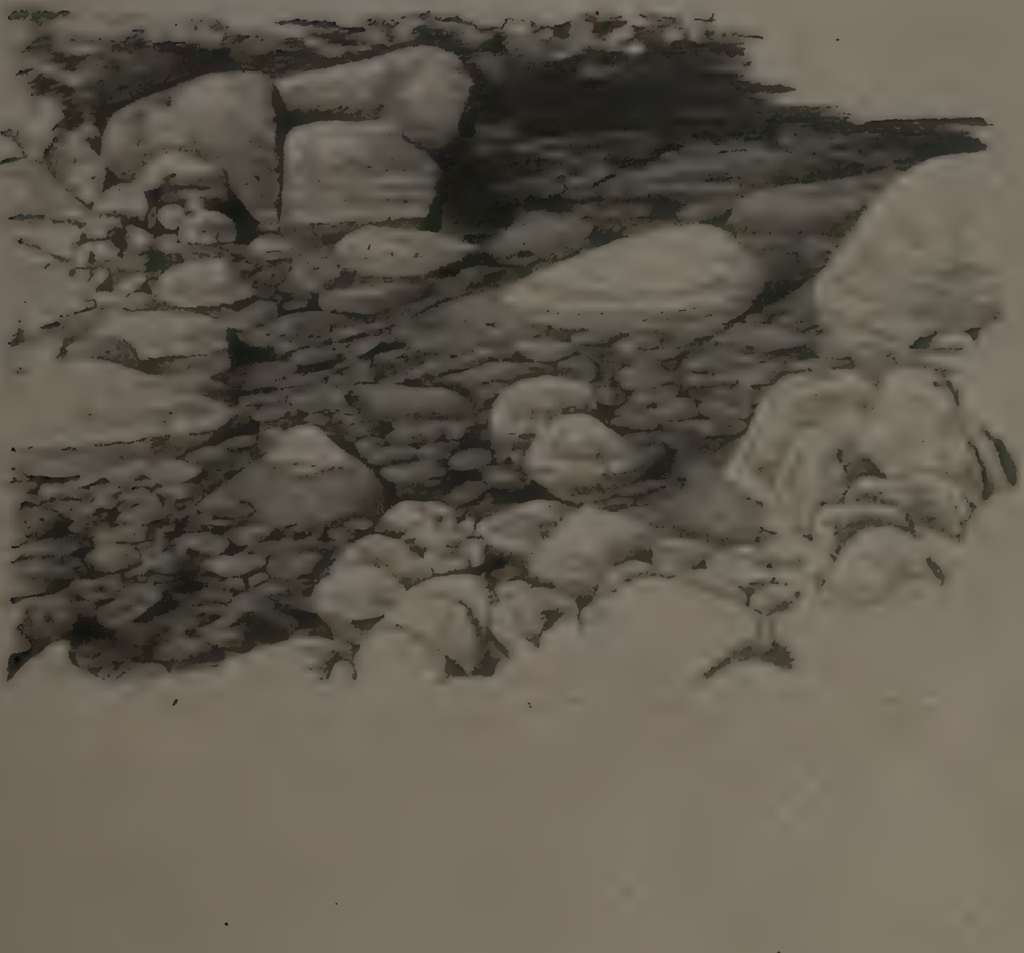
[a] The 3.27 million annual visitor limit reflected is based on the annual parkwide visitation for 1987, the year the Merced River was designated as Wild and Scenic. (see Table IV-16).

[b] PAOT = People at one time. For example, the capacity factors proposed for zone 3B – Camping are based on existing facility capacities. The total number of people allowed per campsite (i.e. six for an individual site), multiplied by the total number of campsites in the Valley and Wawona segments (these are the only segments containing 3B zoning) of the river corridor to determine the total number of people that could be present in those zones at any given time. The total number of acres contained within the 3B management zones (as defined in the Merced River Plan) in both the Valley and Wawona segments was divided by the total number of people within those zones.

[c] PPV = People per view. A view could be a 50-meter section of a popular trail or the viewing area at the base of Lower Yosemite Fall.

Appendix D

Special-Status Species



Appendix D: Special-Status Species

Table D-1
Rare, Threatened, and Endangered Species Considered in this Analysis

Species	Area[a]	Status[b]			Habitat Type/Occurrence
		USFWS	State	Park	
FEDERALLY LISTED THREATENED OR ENDANGERED SPECIES					
Invertebrates					
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	MG	FT			Found in deciduous riparian habitat with elderberry species (*Sambucus* spp.) below 2,000 feet. Elderberry occur at scattered locations within the lower planning corridor. Suitable habitat for this species occurs within the planning corridor. Valley elderberry longhorn beetles are reported from El Portal within the planning corridor.
Fish					
Delta smelt *Hypomesus transpacificus*	OC	FT	CT		Not native to planning corridor. This species does not occur within the planning corridor.
Lahontan cutthroat trout *Oncorhynchus clarki henshawi*	OC	FT			Historically occurred in all accessible cold waters of the Lahonton Basin in a wide variety of water temperatures and conditions. Cannot tolerate the presence of other salmonids. Requires gravel riffles in streams for spawning. Recorded within the west fork of Portuguese Creek – outside the Merced River watershed (CDFG 2004a). This species cannot be considered present within the Merced River watershed except as artificially introduced.
Central Valley steelhead trout *Oncorhynchus mykiss*	OC	FT			Not native to planning corridor. This species does not occur within the planning corridor.
Paiute cutthroat trout *Oncorhynchus clarki seleniris*	OC	FT			Native to the east slope of the Sierra Nevada (NPS 1997w). Not native to Merced River watershed. This species cannot be considered present within the Merced River watershed.
Reptiles and Amphibians					
California red-legged frog *Rana aurora draytonii*	YV, MG	FT	CSC		Found in quiet pools in permanent streams in mixed conifer zones and foothills. Prefers riparian deciduous habitat. Suitable habitat for this species occurs within the planning corridor.
Birds					
Bald eagle *Haliaeetus leucocephalus*	YV, MG	FT	CE		Forages over rivers, streams, and lakes. Primarily eats fish, also carrion, waterbirds, and small mammals. Transient through Yosemite Valley and El Portal. No nesting in the park (NPS 1997w). The species was proposed for delisting 7/6/99. Suitable habitat for this species occurs within the planning corridor.
Mammals					
Sierra Nevada bighorn sheep *Ovis canadensis sierrae*	OC	FE	CE		Occurs primarily along the Sierra Crest in the northeast portion of the park. Most of the herd inhabits Forest Service land adjacent to the park. This species does not occur within the planning corridor.
FEDERAL SPECIES OF CONCERN					
Invertebrates					
Wawona riffle beetle *Atractelmis wawona*	YV, MG, SF	FC			This aquatic species is a listed species due to its limited distribution in the North and South Forks of the Merced River. Historic occurrences of this species are located within the planning corridor. Suitable habitat for this species occurs within the planning corridor.
Merced Canyon shoulderband snail *Helminthoglypta allynsmithi*	MG	FC			Found in rockslide habitat with shade and moisture. This species is associated with rocky areas that are resistant to effects reasonably associated with this plan.

Area of Potential Occurrence: UM = Upper Merced River Corridor (main stem and South Fork), YV = Yosemite Valley, MG = Merced River Gorge (includes El Portal Road into Yosemite Valley), SF = South Fork Merced River (Wawona and below Wawona),
OC = Outside planning corridor

Table D-1
Rare, Threatened, and Endangered Species Considered in this Analysis

Species	Area[a]	Status[b]			Habitat Type/Occurrence
		USFWS	State	Park	
Keeled sideband snail *Monadenia circumcarinata*	YV, MG, SF	FC			Presence in project area unknown (NPS 1997w). This species is associated with rocky areas that are resistant to effects reasonably associated with this plan.
Yosemite Mariposa sideband snail *Monadenia hillebrandi yosemitensis*	YV, MG, SF	FC			Rockslides may be necessary for shelter. This species is associated with rocky areas that are resistant to effects reasonably associated with this plan.
Sierra pygmy grasshopper *Tetrix sierrana*	MG	FC			One record for El Portal (1953). Occurs in upland and riparian habitats. Suitable habitat for this species occurs within the planning corridor.
Bohart's blue butterfly *Philotiella speciosa bohartorum*	MG, SF	FC			An annual in the buckwheat family, *Chorizanthe membrancea*, is the suspected host. It is found in association with serpentine soils. Suitable habitat for this species occurs within the planning corridor.
Fish					
Longfin smelt *Spirinchus thaleichthys*	OC	FC	CSC		Not native to planning corridor. This species does not occur within the planning corridor.
Red hills roach *Lavinia symmetricus*	OC	FC	CSC		Not native to planning corridor. This species does not occur within the planning corridor.
Sacramento splittail *Pogonichthys mecrolepidotus*	OC	FC	CSC		Not native to planning corridor. This species does not occur within the planning corridor.
Reptiles and Amphibians					
Limestone salamander *Hydromantes brunus*	MG	FC	CT		Very limited distribution along Merced River and its tributaries between elevations of 800 and 2,500 feet, usually in association with limestone outcrops. This species has limited distribution along the Merced River, and its habitat – limestone outcrops – and is not vulnerable to effects reasonably associated with this plan.
Mount Lyell salamander *Hydromantes platycephalus*	UM, YV,	FC	CSC		Occurs in massive rock areas between 4,000 and 11,500 feet in elevation, in rock fissures, seeps, shade, and low-growing plants. Suitable habitat for this species occurs within the planning corridor.
Yosemite toad *Bufo canorus*	UM	FCL	CSC		Restricted to areas of wet meadows in central high Sierra Nevada, between 6,400 and 11,300 feet. Suitable habitat for this species occurs within the planning corridor.
Foothill yellow-legged frog *Rana boylei*	YV, MG, SF	FC	CSC		Formerly abundant, and found up to 6,000 feet in elevation, this species has virtually disappeared from its range in the Sierra Nevada from unknown causes. Preferred habitat was rocky streams and wet meadows. Suitable habitat for this species occurs within the planning corridor.
Mountain yellow-legged frog *Rana muscosa*	UM	FCL	CSC		A species of mountain habitats, occurring at elevations from 6,000 to over 12,000 feet, found in streams, lakes, and ponds in a variety of vegetation types. Recent surveys in Yosemite have found that this species is much-reduced in distribution and numbers, probably due primarily to the introduction of non-native fish into its habitats. Suitable habitat for this species occurs within the planning corridor.
Northwestern pond turtle *Clemmys marmorata marmorata*	YV, MG	FC	CSC		Found in the Sierra Nevada up to 6,000 feet in elevation, this species has decreased by up to 80% in numbers, probably due to habitat fragmentation and non-native predators. Habitat is permanent water in a variety of habitat types. Suitable habitat for this species occurs within the planning corridor.

Area of Potential Occurrence: UM = Upper Merced River Corridor (main stem and South Fork), YV = Yosemite Valley, MG = Merced River Gorge (includes El Portal Road into Yosemite Valley), SF = South Fork Merced River (Wawona and below Wawona),
OC = Outside planning corridor

Table D-1
Rare, Threatened, and Endangered Species Considered in this Analysis

Species	Area^a	Status^b			Habitat Type/Occurrence
		USFWS	State	Park	
Southwestern pond turtle *Clemmys marmorata pallida*	YV, MG	FC	CSC		Found in the Sierra Nevada up to 6,000 feet in elevation, this species has decreased by up to 80% in numbers, probably due to habitat fragmentation and non-native predators. Habitat is permanent water in a variety of habitat types. Suitable habitat for this species occurs within the planning corridor.
Northern sagebrush lizard *Sceloporus graciosus graciosus*	UM	FC			Inhabits mountain slopes, forested slopes, and open areas. Occurs in sandy areas near water. Suitable habitat for this species occurs within the planning corridor.
Birds					
Harlequin duck *Histrionicus histrionicus*	YV, MG, SF	FC	CSC		Breeds along large, swift-moving mountain rivers. Was formerly found in every major watershed in the Sierra, but has disappeared. Formerly nested in Yosemite Valley (NPS 1997w). This species was observed breeding in Yosemite Valley in 2002, and observed within Yosemite Valley without evidence of breeding in 2003 and 2004 (NPS 2004m).
Northern goshawk *Accipiter gentilis*	UM, YV, SF	FC	CSC		Favors moderately dense coniferous forests broken by meadows, and other openings, between 5,000 and 9,000 feet in elevation. Typically nests in mature conifer stands near streams. Habitat destruction in its range has caused declines in population. Records exist for Yosemite Valley, primarily between November and February. Suitable habitat for this species occurs within the planning corridor.
American Peregrine falcon *Falco peregrinus anatum*	YV, MG	FD	CE		Usually nest on high cliffs near water to search for prey The species was formally delisted 8/25/99. Suitable habitat for this species occurs within the planning corridor.
Long-billed curlew *Numenius americanus*	OC	FC			Breeds in wet meadow habitat in northeastern California. Preferred winter habitats include large coastal estuaries, upland herbaceous areas, and croplands Suitable habitat for this species does not occur within the planning corridor.
Burrowing owl *Athene cunicularia*	OC	FC	CSC		Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation; subterranean nester in small mammal burrows. Suitable habitat for this species does not occur within the planning corridor.
Flammulated owl *Otus flammeolus*	YV, MG, SF	FC			Various coniferous habitats from ponderosa pine to red fir forests. Breeds in the North Coast and Klamath Ranges, Sierra Nevada, and in suitable habitats in mountains in southern California. Suitable habitat for this species occurs within the planning corridor.
California spotted owl *Strix occidentalis occidentalis*	YV, MG, SF	FC	CSC		Breeds from oak and ponderosa pine forests upslope to lower-elevation red fir forests up to 7,600 feet, with mixed conifer the optimum type. Presence of black oak in the forest canopy also enhances habitat suitability. Suitable habitat for this species occurs within the planning corridor.
Vaux's swift *Chaetura vauxi*	YV	FC	CSC		Inhabits redwood and Douglas-fir habitats. Utilizes large hollow trees and snags, especially tall, burned-out stubs for nest sites. This species is mostly transient through the planning corridor. Breeding occurs in Yosemite Valley, usually in forested habitat near meadows (NPS 2004m).

Area of Potential Occurrence: UM = Upper Merced River Corridor (main stem and South Fork), YV = Yosemite Valley, MG = Merced River Gorge (includes El Portal Road into Yosemite Valley), SF = South Fork Merced River (Wawona and below Wawona),
OC = Outside planning corridor

Table D-1
Rare, Threatened, and Endangered Species Considered in this Analysis

Species	Area[a]	Status[b]			Habitat Type/Occurrence
		USFWS	State	Park	
Black swift *Cypseloides niger*	YV	FC	CSC		Occurs in mountainous regions of the western United States and Canada. Currently, black swifts occur in three widely separated areas: central Colorado through central Utah; central and southwestern coastal California; and southern Alaska to northern Washington and inland to southwestern Alberta, northern Idaho, and northwestern Montana. This species has been observed within Yosemite Valley, specifically at Vernal Fall in 1990 (NPS 2004m).
Rufous hummingbird *Selasphorus rufus*	YV	FC			Found in a wide variety of habitats that provide nectar-producing flowers. Uses valley foothill hardwood, valley foothill hardwood-conifer, riparian, and various chaparral habitats in both northward and southward migration; montane riparian, aspen, and high mountain meadows (to treeline and above) used in southward migration. Suitable habitat for this species occurs within the planning corridor.
Lewis' woodpecker *Melanerpes lewis*	OC	FC			Occurs in open oak savannahs, broken deciduous, and coniferous habitats. Breeds locally along eastern slopes of the Coast Ranges, and in the Sierra Nevada, Warner Mountains, Klamath Range, and the Cascade Range Suitable habitat for this species does not occur in the planning corridor.
White-headed woodpecker *Picoides albolarvatus*	YV	FC			Occurs in montane coniferous forests up to lodgepole pine and red fir habitats in the Sierra Nevada, Cascade, Klamath, Transverse, and Peninsular Ranges, and Warner Mountains. Suitable habitat for this species occurs in the planning corridor.
Nuttall's woodpecker *Picoides nuttallii*	YV, MG	FLC			Occurs in the Central Valley, Coast Ranges, and in lower portions of the Cascade Range and Sierra Nevada. Forages mostly in oak and riparian deciduous habitats. This species occurs commonly in El Portal and less commonly in Yosemite Valley (NPS 2004m).
Loggerhead shrike *Lanius ludovicianus*	OC	FC	CSC		Nests in shrublands and forages in open grasslands. Suitable habitat for this species does not occur in the planning corridor
Oak titmouse *Baeolophus inornatus*	MG	FLC			Live oaks and deciduous woodlands. Suitable habitat for this species occurs within the planning corridor.
American dipper *Cinclus mexicanus*	YV	FLC			Permanent resident throughout most of western United States, along mountain streams.This species often nests under bridges in Yosemite Valley (NPS 2004m).
California thrasher *Toxostoma redivivum*	OC	FC			Occupies moderate to dense chaparral habitats and, less commonly, extensive thickets in young or open valley foothill riparian habitat in foothill and lowland areas. Suitable habitat for this species does not occur within the planning corridor.
Tricolored Blackbird *Agelais tricolor*	OC	FC	CSC		Colonial nesting species in emergent wetlands. This species has not been reported from the planning corridor.
Bell's sage sparrow *Amphispiza belli belli*	OC	FC	CSC		This species has not been reported from the planning corridor.
Lawrence's goldfinch *Carduelis lawrencei*	OC	FC			Breeds in oak or other open woodlands near water. This species has not been reported from the planning corridor.
Mammals					
Mount Lyell shrew *Sorex lyelli*	UM	FC	CSC		Favors riparian zones and other wet sites (USFS 1980). Known only from the vicinity of Mount Lyell (outside the planning corridor) within the park. Suitable habitat for this species occurs within the planning corridor

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Table D-1
Rare, Threatened, and Endangered Species Considered in this Analysis

Species	Area[a]	Status[b]			Habitat Type/Occurrence
		USFWS	State	Park	
Spotted bat *Euderma maculatum*	YV, MG, SF, UM	FC	CSC		Rare throughout range. Uses crevices in rock faces for roosting and reproduction. Forages in a wide variety of habitats, primarily for moths. Suitable habitat for this species occurs within the planning corridor.
Small-footed myotis bat *Myotis ciliolabrum*	MG, UM, YV, SF	FC			Usually found above 6,000 feet and in wooded and brushy habitats near water. Forages among trees and over water. Breeds in colonies in buildings, caves, and mines (NPS 1997w). Suitable habitat for this species occurs within the planning corridor.
Long-eared myotis bat *Myotis evotis*	YV, MG, UM, SF	FC			Wide range from coast to high Sierra Nevada; montane oak woodlands. Roosts primarily in hollow trees, especially large snags or lightning-scarred live trees. Suitable habitat for this species occurs within the planning corridor.
Fringed myotis bat *Myotis thysanodes*	YV, MG, SF, UM	FC			Found to at least 6,400 feet in the Sierra Nevada, in deciduous/mixed conifer forests. Feeds over water, in open habitats, and by gleaning from foliage. Roosts in caves, mines, buildings, and trees, especially large conifer snags. Suitable habitat for this species occurs within the planning corridor.
Long-legged myotis bat *Myotis volans*	YV, MG, UM, SF	FC			Found up to high elevations in the Sierra Nevada, in montane coniferous forest habitats. Forages over water, close to trees and cliffs, and in openings in forests. Roosts primarily in large-diameter snags. Forms nursery colonies numbering hundreds of individuals, usually under bark or in hollow trees. Suitable habitat for this species occurs within the planning corridor.
Yuma myotis bat *Myotis yumanensis*	YV, MG, SF, UM	FC	CSC		Usually occurs below elevations of 8,000 feet. Forages over open, still, or slow-moving water and above low vegetation in meadows. Roosts in buildings, caves, or crevices. Nursery colonies of several thousand individuals may be in buildings, caves, or mines. Suitable habitat for this species occurs within the planning corridor.
Greater western mastiff bat *Eumops perotis californicus*	YV, MG, SF, UM	FC	CSC		Found in a variety of habitats to elevations over 8,000 feet. Roosts primarily in crevices in cliff faces, and occasionally trees. Detected most often over meadows and other open areas, but will also feed above forest canopy; sometimes to high altitudes (1,000 feet). Suitable habitat for this species occurs within the planning corridor.
Pygmy rabbit *Brachylagus idahoensis*	OC	FC	CSC		This species has not been reported from the planning corridor.
Sierra Nevada snowshoe hare *Lepus americanus tahoensis*	OC	FC	CSC		This species has not been reported from the planning corridor.
Mono Basin mountain beaver *Aplodontia rufa californica*	SF, UM	FC	CSC		Prefers willow-lined perennial streams through montane meadows, where it establishes a system of burrows, often with the stream running through them. Suitable habitat for this species occurs within the planning corridor.
Marten *Martes americanus*	UM, SF, YV	FC			Found in dense, complex coniferous forests with large trees and snags. Structural complexity near the ground is important for foraging and protection from predators. Suitable habitat for this species occurs within the planning corridor.
Fisher *Martes pennanti*	UM, SF	FCL	CSC		Occurs in coniferous forests and deciduous-riparian habitats with a high percentage of canopy closure, mostly above elevations of approximately 6,000 feet. Carnivorous, but may also eat fruit and fungi. Densities of fisher in the central Sierra Nevada appear to be very low, for unknown reasons. Higher densities exist in both the northern and southern Sierra Nevada. Suitable habitat for this species occurs within the planning corridor.

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Vegetation					
Three-bracted onion *Allium tribracteatum*	MG, SF	FC		PS	Found in chaparral and Sierran coniferous forest on volcanic slopes and ridges between 3,400 and 9,750 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Big-scale balsamroot *Balsamorhiza macrolepis* var *macrolepis*	MG	FLC		PW	Valley and foothill grassland and woodland communities. Often associated with serpentine soils. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Mono hot springs evening primrose *Camissonia sierrae* ssp. *alticola*	UM	FC		PS	Known from few occurrences in Fresno and Mariposa Counties. In sand or gravel over granite in mixed conifer forests. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Small's southern clarkia *Clarkia australis*	UM	FC		PS	Confined to open ponderosa pine forests. Recorded at Tioga Road and at the Toll House (CDFG 2004a). No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Mariposa clarkia *Clarkia biloba* ssp. *australis*	MG, SF	FC		PS	Chaparral and cismontane woodlands. Endemic to Mariposa and Tuolumne Counties outside the park. Recorded along the South Fork Merced River, Mouth of Ned's Gulch, Sweetwater Creek, and along Highway 140 (CDFG 2004a). No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Merced clarkia *Clarkia lingulata*	MG, SF	FC	CE	PS	Endemic to Mariposa County west of Yosemite National Park and the El Portal Administrative Site. Associated with metamorphic gravels and talus in red clay on north-facing slopes and canyon bottoms within chaparral, coniferous forest, and cismontane woodland communities. Recorded along Highway 140 near the South Fork Merced River outside the planning corridor (CDFG 2004a). Suitable habitat for this species occurs within the planning corridor.
Congdon's woolly sunflower *Eriophyllum congdonii*	MG, SF	FC	R	PS	Restricted to dry, mostly south-facing metamorphic and metasedimentary outcrops. Occurs on dry ridges on metamorphic rocks, scree, and talus. One plant has been located at the Sand Pit in El Portal. Known population of this species occurs within the planning corridor (NPS 2004k, USGS 2004b).
Yosemite woolly sunflower *Eriophyllum nubigenum*	UM	FC		PS	South-facing granitic slabs, domes, and gravels. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Short-leaved hulsea *Hulsea brevifolia*	UM	FLC		PS	Inhabits granitic or volcanic montane coniferous forests between 4,950 and 10,560 feet in elevation with gravelly or sandy soils. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Red-rayed hulsea *Hulsea heterochroma*	UM	FLC		PS	Known from sandy open coniferous forests and recent burns. Known population of this species occurs within the planning corridor (NPS 2004k, NPS 1985c).
Yosemite lewisia *Lewisia disepala*	UM, YV, MG	FC		PS	Occurs on fine gravel on rock outcrops, domes, or ridges. Known population of this species occurs within the planning corridor (NPS 2004k, NPS 1985c).
Congdon's lomatium *Lomatium congdonii*	MG	FC		PS	Restricted to serpentine and metamorphic soils in canyon live oak woodlands. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.

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Slender-stemmed monkeyflower *Mimulus filicaulis*	MG	FC		PS	Located in moist granitic soils and meadow edges – vernally mesic sites. Recorded near Snow Creek, Merced Grove, Moss Creek, Bull Creek, and Big-Grizzly Mountain (CDFG 2004a). No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Pansy monkeyflower *Mimulus pulchellus*	YV	FLC		PS	Found in vernally moist, open gravelly places such as vernal pools. No reported occurrences, but suitable habitat for this species occurs within the planning corridor
Yosemite popcorn-flower *Plagiobothrys torreyi* var. *torreyi*	YV	FLC		PS	Located in moist granitic soils and meadow edges/disturbed sites often in partial shade between about 3,900 to 5,700 feet. Known historic occurrences of this species are located between Happy Isles and Mirror Lake, and at Sentinel Bridge and Bridalveil Meadow (CDFG 2004a). Known population of this species occurs within the planning corridor (USGS 2004b)
[No common name] *Schizymenium shevockii*	MG, SF	FLC			Found in cismontane woodland in areas with metamorphic rock, on rock ledges and overhangs. Known populations of this species occur within the planning corridor at Cold Creek near the Redbud Picnic Area (Shevock 2004).
Bolander's clover *Trifolium bolanderi*	YV	FC		PS	Confined to wet montane meadows. This species occurs along Glacier Point Road (outside the planning corridor). No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
STATE LISTED RARE, THREATENED, OR ENDANGERED SPECIES AND SPECIES OF SPECIAL CONCERN					
Birds					
Cooper's hawk *Accipiter cooperi*	YV, UM, MG, SF		CSC		A hawk of wooded areas, found up to 9,000 feet in the Sierra Nevada. Numerous recent records for Yosemite, especially in Yosemite Valley. Habitat destruction in its range has led to population declines. Frequently hunts along wooded edges (NPS 1997w). This species is relatively tolerant of high levels of disturbance.
Sharp-shinned hawk *Accipiter striatus*	YV, UM, MG, SF		CSC		Hunts in open coniferous forest and edges of meadows and clearings between elevations of 4,000 and 7,000 feet in the Sierra Nevada. Nests in forests. One old (1930) nesting record for Yosemite Valley (NPS 1997w). This species is relatively tolerant of high levels of disturbance.
Merlin *Falco columbarius*	OC		CSC		Occurs mostly below elevations of 4,000 feet, ranging from annual grasslands to ponderosa pine and California black oak woodland, but prefers open country. Feeds primarily on birds. Reduction in numbers over recent decades may be due to pesticides. This species has not been reported from the planning corridor.
Prairie falcon *Falco mexicanus*	UM, YV		CSC		Primarily associated with open areas such as grasslands and meadows, where it feeds on small mammals and birds. Nests on cliffs. Numbers have declined in California due to several probable factors, including nest robbing by humans, control of prey species, and pesticides. Many records of this species in alpine areas of Yosemite National Park and occasionally seen in Yosemite Valley. Suitable habitat for this species occurs within the planning corridor.
Long-eared owl *Asio otus*	YV, MG, SF		CSC		Requires riparian or other thickets with small, densely canopied trees for roosting and nesting. Proximity of this habitat to meadow edges for hunting also enhances quality. One nesting record in Yosemite Valley in 1915 (NPS 1997w). Suitable habitat for this species occurs within the planning corridor.

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Great gray owl *Strix nebulosa*	UM, YV, SF		CE		Entire California population of this species is restricted to the Yosemite region, where it reaches southernmost extent of its North American range. Breeds in mixed conifer/red fir forests bordering meadows. Winters in mixed conifer down to blue oak woodlands. Research suggests that human disturbance could affect foraging success of this species, which may explain its absence from Yosemite Valley, and raises concern about actions that may increase human disturbance on great gray owl habitat. Suitable habitat for this species occurs within the planning corridor.
Little willow flycatcher *Empidonax traillii brewsteri*	YV, SF		CE		Breeds in mountain meadows and riparian areas from elevations of 2,000 to 8,000 feet in the Sierra Nevada, with lush growth of shrubby willows. Has disappeared from much of its range, due to habitat destruction and parasitism from brown-headed cowbirds. Suitable habitat for this species occurs within the planning corridor.
Yellow warbler *Dendroica petechia*	YV, MG, SF		CSC		Prefers riparian woodlands, but also breeds in chaparral, ponderosa pine, and mixed conifer habitats with substantial amounts of brush. In recent decades, numbers of breeding pairs have declined dramatically in many lowland areas of California. A major cause of this decline has apparently been brown-headed cowbird parasitism (NPS 1997w). Suitable habitat for this species occurs within the planning corridor.
Mammals					
Pallid bat *Antrozous pallidus*	YV, SF, MG		CSC		Primarily found below 6,000 feet in elevation, in a variety of habitats, especially oak, ponderosa pine, and giant sequoia habitats. Roosts in rock outcrops, caves, and especially hollow trees. Suitable habitat for this species occurs within the planning corridor.
Pale big-eared bat *Corynorhinus townsendii pallescens*	YV		CSC		Found in all habitats up to alpine zone. Requires caves, mines, or buildings for roosting. Prefers mesic habitats where it gleans from brush or trees along habitat edges. Recorded at Wildcat Creek bridge and Mirror Lake (CDFG 2004a). Suitable habitat for this species occurs within the planning corridor.
Townsend's big-eared bat *Corynorhinus townsendii townsendii*	YV, MG, SF, UM		CSC		Found in all habitats up to alpine zone. Requires caves, mines, or buildings for roosting. Prefers mesic habitats where it gleans from brush or trees along habitat edges. Suitable habitat for this species occurs within the planning corridor.
Sierra Nevada red fox *Vulpes vulpes necator*	UM		CT		Primarily found in red fir, lodgepole pine, subalpine forests, and alpine fell-fields. Found mostly above 7,000 feet and rarely below elevations of 5,000 feet. Five unconfirmed reports for Yosemite Valley, but these sightings could have been of eastern red fox, a non-native species that is present on the west slope of the Sierra Nevada. Suitable habitat for this species occurs within the planning corridor.
California wolverine *Gulo gulo luteus*	UM		CT		Found in a wide variety of mountain habitats. Needs water, caves, logs, or other cover for denning. No wolverine occurrences have been recorded within California since the 1970s (CDFG 2004a). This species is presumed extirpated from California.

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Vegetation					
Yosemite onion *Allium yosemitense*	SF		R	PS	Confined to open metamorphic slabs, talus slopes, and scree. Known population of this species occurs within the planning corridor (NPS 1985c, USGS 2004b).
Tompkin's sedge *Carex tompkinsii*	MG		R	PS	Limited to foothill oak woodland and chaparral areas and along lower talus slopes. Found sporadically from Arch Rock to El Portal in the Merced River gorge. Known populations of this species occur within the planning corridor (USGS 2004).
Congdon's lewisia *Lewisia congdonii*	MG		R	PS	Grows on moist exposed metamorphic rock faces and slopes. Occurs in chaparral and mixed conifer forest on north-facing slopes in shade. Known population of this species occurs within the planning corridor (NPS 1985c, USGS 2004b).
PARK SENSITIVE SPECIES					
Vegetation					
Mountain bent grass *Agrostis humilis*	UM			PS	Grows in subalpine coniferous forest, alpine boulder and rock field, and meadows and seeps from 8,800 to 10,500 feet in elevation. An historic occurrence of this species was recorded west of Tenaya Lake (CDFG 2004a). No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Sugar stick *Allotropa virgata*	YV			PS	Confined to black oak and mixed conifer forest areas. No reported occurrences, but suitable habitat for this species occurs within the planning corridor
Broad-podded phoenicaulis *Anelsonia eurycarpa*	UM			PS	Found on broken rock, talus, slopes, ridges. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Pasque flower *Anemone occidentalis*	UM			PS	Occurs on open, rocky slopes and montane coniferous forest between 3,900 and 10,200 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Slender silver-moss *Anomobryum julaceum*	YV			PS	Found in exposed seasonally wet soils, such as along south facing walls. Historic occurrence of this species is located near Yosemite Falls (CDFG 2004a). No recent reported occurrences, but suitable habitat for this species occurs within the planning corridor (Shevock 2004).
Snapdragon *Antirrhinum leptaleum*	SF			PS	Restricted to small washes and shallow ditches in disturbed areas. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Weeping-fruited Holboell's rock cress *Arabis holboellii* var. *pendulocarpa*	UM			PS	Occurs on rocky slopes in yellow pine forest to subalpine forest between 5,000 and 10,500 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Inyo rock cress *Arabis inyoensis*	UM			PS	Found on rocky ridges and slopes in pinyon-juniper woodland to subalpine forest between 5,000 and 11,000 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Lyall's rock cress *Arabis lyallii* var. *lyallii*	UM			PS	Found on rock crevices, talus, meadows, alpine fell fields between 7,800 and 12,200 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Greene's rock cress *Arabis repanda* var. *greenei*	UM			PS	Occurs between approximately 8,860 and 11,810 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor

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Repand rock cress *Arabis repanda* var. *repanda*	UM, YV, MG, SF			PS	Found on gravel, rocks, talus, dry slopes, often under pines, in yellow pine forest, red fir forest, lodgepole forest between 4,600 and 9,200 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Lemmon's wild ginger *Asarum lemmonii*	UM, YV, MG, SF			PS	Occurs in shady wet sites in yellow pine and red fir forest between 3,600 and 6,200 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Alpine spiny rattleweed *Astragalus kentrophyta* var. *danus*	MG, SF			PS	Grows on alpine summits with metamorphic bedrock. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Sierra bolandra *Bolandra californica*	YV			PS	Found in lower and upper montane coniferous, rocky and mesic habitats. Known population of this species occurs within the planning corridor (NPS 1985c).
Hair-leaf sedge *Bulbostylis capillaris*	YV, MG, SF			PS	Occurs in yellow pine forest, in meadows and seeps and meadow habitats between 4,000 and 6,000 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Yosemite evening-primrose *Camissonia sierrae* ssp. *sierrae*	YV			PS	Located on granite outcrops in ponderosa pine or foothill pine/blue oak forests. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Sedge *Carex albonigra*	MG			PS	Locally rare in the Sierra Nevada in alpine marshy areas and springs. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Buxbaum's sedge *Carex buxbaumii*	UM			PS	Occurs in montane and subalpine fens; yellow pine, red fir, lodgepole, and subalpine forests, meadows, seeps. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Sedge *Carex capitata*	MG			PS	Restricted in the Sierra Nevada; strictly alpine. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Congdon's sedge *Carex congdonii*	MG			PS	Talus slopes. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Cleft sedge *Carex fissuricola*	UM			PS	Located in meadow slopes and flats, among rocks, in red fir and subalpine forests, between 5,000 and 11,500 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Cloud sedge *Carex haydeniana*	UM			PS	Occurs in rocky slopes and flats in snow-melt areas, subalpine forest, alpine fell-fields between 7,800 and 13,800 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Dana's sedge *Carex incurviformis* var. *danaensis*	UM			PS	Occurs in alpine fell-fields in open, gravelly or rocky slopes. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Shore sedge *Carex limosa*	UM, YV, MG, SF			PS	Found in bogs and fens in montane coniferous forest, meadows, and marshes. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Meadow sedge *Carex praticola*	MG			PS	Found in meadows and open woods below 2,000 feet. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Single-spiked sedge *Carex scirpoidea* var. *pseudoscirpoidea*	UM, YV, MG, SF			PS	Occurs in rocky places that are at least seasonally wet. No reported occurrences, but suitable habitat for this species occurs within the planning corridor

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Tahoe sedge *Carex tahoensis*	UM			PS	Found in open dry rocky slopes in subalpine forest, alpine fell-fields between 9,500 and 12,200 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Whitney's sedge *Carex whitneyi*	YV			PS	Found in sandy and gravelly meadows. Known population of this species occurs within the planning corridor (NPS 1985c).
Indian paintbrush *Castilleja foliolosa*	MG			PS	Found on dry, open, rocky slopes on the edge of chaparral areas. No recorded occurrences, but suitable habitat for this species occurs within the planning corridor.
Fresno ceanothus *Ceanothus fresnensis*	YV, MG. SF				Occurs in cismontane woodland and lower montane coniferous forest habitats. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Alpine cerastrum *Cerastrum beeringianum*	MG			PS	Grows near snowbanks in alpine areas. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Bolander's woodreed *Cinna bolanderi*	MG,SF			PS	Found in meadows and seeps, streamside and other mesic areas in subalpine coniferous forest between 5,511 and 8,052 feet in elevation. Recorded occurrences of this species are located near Mariposa Grove (CDFG 2004a) and Tamarack Flat (NPS 2004l). No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Fell-fields claytonia *Claytonia megahiza*	UM			PS	Occurs on gravelly soils or crevices between rocks within alpine fell fields and subalpine coniferous forests. No recorded occurrences, but suitable habitat for this species occurs within the planning corridor.
Sierra spring beauty *Claytonia nevadensis*	UM			PS	Occurs in alpine fell-fields. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Bride's bonnet *Clintonia uniflora*	YV, MG, SF			PS	Found in yellow pine forest and red fir forest between 3,500 and 6,000 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Child's blue-eyed Mary *Collinsia childii*	MG, SF			PS	Endemic to central and southern Sierra Nevada, reaching the northern extent of its range in Mariposa County. Occurs on shaded slopes and in open oak and mixed coniferous woodlands. Known population of this species occurs within the planning corridor (NPS 2004l, NPS 1985c).
Collinsia *Collinsia linearis*	MG, SF			PS	Restricted to dry, metamorphic rock outcrops along the metamorphic-granitic contact zone. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Short-bracted bird's-beak *Cordylanthus rigidus* ssp. *brevibracteatus*	YV, MG, SF			PS	Found between approximately 3,280 and 8,200 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Truckee cryptantha *Cryptantha glomeriflora*	UM			PS	Occurs in yellow pine, red fir, lodgepole, and subalpine forests, meadows, seeps, slope habitats. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Mountain lady's slipper *Cypripedium montanum*	YV, MG			PS	Found in broad-leaved upland forest, lower montane conferous forest. Known occurrence of this species occurs within the planning corridor (NPS 1985c, USGS 2004b).
Red larkspur *Delphinium nudicaule*	MG, SF			PS	Found in chaparral, foothill woodland, mixed evergreen forest, and yellow pine forest in dry conditions in slope habitats up to 6,500 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor

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Few-flowered bleeding heart *Dicentra pauciflora*	UM			PS	Located in gravelly sites in subalpine forest and alpine fell-fields between 4,000 and 10,000 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Subalpine draba *Draba praealta*	UM			PS	Occurs in montane or subalpine moist meadows, streambanks, above 10,000 feet. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Sundew *Drosera rotundifolia*	UM			PS	Confined to sphagnum bogs. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Broad-leaved willow herb *Epilobium latifolium*	UM			PS	Found in lodgepole pine forest and subalpine forest in wet stony places. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Stream orchid *Epipactis gigantea*	YV			PS	Restricted to moist granitic ledges, and planted in landscaped areas. Known populations of this species occur within the planning corridor (NPS 2004l, NPS 1985c, USGS 2004b).
Shining fleabane *Erigeron barbellulatus*	UM			PS	Occurs on gravelly or rocky slopes in red fir forest to subalpine forest. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Rayless fleabane *Erigeron inornatus* var. *inornatus*	MG, SF			PS	Located in forest openings, dry rocky places, in foothill woodland, mixed evergreen forest, yellow pine forest, and red fir forest. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Wild daisy *Erigeron linearis*	MG			PS	Known from the metamorphic contact zone. No reported occurrences, but suitable habitat for this species may occur within the planning corridor.
Wild daisy *Erigeron vagus*	OC			PS	Rare on crest and eastern slopes of the Sierra Nevada No reported occurrences, and suitable habitat for this species does not occur within the planning corridor.
Buckwheat *Eriogonum prattenianum*	OC			PS	Found on rock outcrops within river corridors. No reported occurrences, and suitable habitat for this species does not occur within the planning corridor.
Naked wild buckwheat *Eriogonum nudum* var. *scapigerum*	OC			PS	Found on alpine slopes. No reported occurrences, and suitable habitat for this species does not occur within the planning corridor.
Slender cotton-grass *Eriophorum gracile*	YV, MG, SF			PS	Found in yellow pine forest, red fir forest, and mixed evergreen forest in meadows and bogs. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Fawn-lily *Erythronium purpurascens*	YV			PS	Endemic to the Sierra Nevada, growing along shaded stream and river corridors. Known population of this species occurs within the planning corridor (NPS 2004l, NPS 1985c).
Small-flowered fescue *Festuca minutiflora*	UM, YV, MG, SF			PS	Occurs on moist, shady banks. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Pine-woods fritillary *Fritillaria pinetorum*	UM			PS	Found in yellow pine, red fir, lodgepole, and subalpine forest, on granitic substrate in slope habitats between 6,000 and 10,500 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Explorer's gentian *Gentiana calycosa*	UM			PS	Occurs in red fir forest, lodgepole forest, and subalpine forest in moist conditions between 4,000 and 10,500 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.

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Species	Area[a]	Status[b]			Habitat Type/Occurrence
		USFWS	State	Park	
Boreal bedstraw *Galium boreale* ssp. *septentrionale*	YV			PS	Found in wet lower montane meadows. No reported occurrences, but suitable habitat for this species occurs within the planning corridor
Dane's gentian *Gentianella tenella*	MG			PS	Occurs in high meadows. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
California sunflower *Helianthus californicus*	MG			PS	Found in foothill woodland, valley grassland, freshwater wetlands, meadows, and seeps, in wet conditions up to 6,000 feet in elevation. Known population of this species is located north of the planning corridor (NPS 1985c).
Goldenaster *Heterotheca sessiliflora* ssp. *echioides*	YV, MG			PS	Limited to grasslands and open oak woodlands. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Hairy goldenaster *Heterotheca villosa* var. *hispida*	OC			PS	Found in rocky places in red fir forest and Joshua tree woodland. No reported occurrences, and suitable habitat for this species does not occur within the planning corridor.
Oceanspray *Holodiscus discolor*	MG			PS	Found in lower to middle montane forests in rocky, dry areas. Known population of this species is located near the planning corridor (NPS 1985c).
Western quillwort *Isoetes occidentalis*	OC			PS	Found in mountain lakes in red fir forest to subalpine forest. No reported occurrences, and suitable habitat for this species does not occur within the planning corridor.
Yosemite ivesia *Ivesia unguiculata*	YV			PS	Endemic to montane meadows and forest edges. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Common juniper *Juniperous communis* var. *montana*	MG			PS	Rocky or wooded slopes in high elevation forests. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Pitcher sage *Lepechinia calycina*	MG			PS	Found on rocky slopes within chaparral and canyon live oak woodlands. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Sierra laurel *Leucothoe davisiae*	YV			PS	Grows in wet areas and bogs in acid soil. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
False pimpernel *Lindernia dubia* var. *anagallidea*	YV			PS	Lives in wet meadows. Known occurrence of this species occurs within the planning corridor (NPS 1985c).
Tanoak *Lithocarpus densiflorus* var. *echinoides*	YV, MG, SF			PS	Occurs in dry conditions in slope habitats between approximately 1,970 and 6,560 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Slender lupine *Lupinus gracilentus*	UM			PS	Found in subalpine coniferous forest. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Inyo meadow lupine *Lupinus pratensis* var. *pratensis*	YV, MG, SF			PS	Occurs in meadows and stream banks between 3,300 and 11,550 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Northern bugleweed *Lycopus uniflorus*	YV, MG, SF			PS	Found in moist areas, marshes, and near springs between 5,280 and 6,600 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Yosemite tarplant *Madia yosemitana*	YV, MG,SF			PS	Occurs in lower montane coniferous forests, grassy slopes, and meadows between 3,960 and 7,590 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.

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Elongate copper-moss *Mielichhoferia elongate*	MG, SF			PS	Found in cismontane woodland in areas with metamorphic rock, on rock ledges and overhangs. Known populations of this species occur within the planning corridor at Cold Creek near the Redbud Picnic Area (Shevock 2004).
Bicolored monkeyflower *Mimulus bicolor*	MG, SF			PS	Found in foothill woodland, yellow pine forest, and chaparral in moist conditions; usually occurs in nonwetlands, but occasionally found in wetlands up to 6,000 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Congdon's monkeyflower *Mimulus congdonii*	MG			PS	Found in granitic soils in disturbed areas, seeps, runoff areas on slopes. Known population of this species occurs within the planning corridor (NPS 1985c).
Purple mouse-ears *Mimulus douglasii*	MG, SF			PS	Occurs in chaparral and foothill woodland on gravelly serpentine soils under moist conditions, equally likely in wetlands or nonwetlands up to 4000 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Inconspicuous monkeyflower *Mimulus inconspicuous*	MG			PS	Found near hillside streams or seeps in partial shade. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Cut-leaved monkeyflower *Mimulus laciniatus*	MG, SF			PS	Occurs in chaparral, lower and upper montane conifer forest, and mesic areas of granitic substrate. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Palmer's monkeyflower *Mimulus palmeri*	MG			PS	Restricted to damp, shaded slopes under canyon live oaks. Known population of this species occurs near planning corridor (NPS 2004l). Suitable habitat for this species occurs within the planning corridor.
Alpine sandwort *Minuartia obtusiloba*	UM			PS	Occurs in subalpine coniferous forest, dwarf scrub, alpine boulder and rock field on metamorphic rock. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Dwarf sandwort *Minuartia pusilla*	MG			PS	Confined to open pine forests and chaparral slopes. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Bishop's cap *Mitella pentandra*	YV			PS	Known from red fir forest, lodgepole forest in rocky soil, occurs almost always under natural conditions in wetlands. Known population of this species occurs within the planning corridor (NPS 1985c).
Sierra sweet-bay *Myrica hartwegii*	SF			PS	Endemic to the northern and central Sierra Nevada. Restricted to streambanks, forming small thickets along the river. Known population of this species occurs within the planning corridor (NPS 2004l, NPS 1985c, USGS 2004b).
Bog asphodel *Narthecium californicum*	MG, SF			PS	Found in yellow pine, red fir, and Douglas-fir forests, meadows, seeps and wet conditions almost always in wetlands up to 8,500 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Azure penstemon *Penstemon azureus* ssp. *angustissimus*	YV			PS	Generally found in moist woodlands and open forests. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Foothill penstemon *Penstemon heterophyllus* var. *purdyi*	MG, SF			PS	Located in chaparral, foothill woodland, and yellow pine forest in dry conditions on slope habitats; up to approximately 5,250 feet in elevation.
Phacelia *Phacelia platyloba*	MG			PS	Found in gravelly or rocky soils in chaparral and canyon live oak woodland. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.

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Phacelia *Phacelia tanacetifolia*	YV			PS	Grows in moist sandy and gravelly open areas. Known population of this species occurs within the planning corridor (NPS 1985c).
Condensed phlox *Phlox condensata*	OC			PS	Found on dry slopes and benches, especially on travertine or limestone, in pinyon-juniper woodland, yellow pine forest. No reported occurrences, and suitable habitat for this species does not occur within the planning corridor.
Coleman's piperia *Piperia colemanii*	MG, SF			PS	Occurs in chaparral and lower montane coniferous forest. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Bog bluegrass *Poa leptocoma* ssp. *leptocoma*	UM			PS	Occurs on wet stream banks and boggy meadows in lodgepole forest and subalpine forest habitats. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Sierra podistera *Podistera nevadensis*	UM			PS	Occurs in alpine boulder and rock field habitats. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Great polemonium *Polemonium occidentale*	UM			PS	Found in yellow pine, red fir, lodgepole, and subalpine forests in wet conditions almost always in wetlands up to 11,000 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Showy polemonium *Polemonium pulcherrimum*	UM			PS	Found in subalpine forest and alpine fell-fields, on rocky soil and volcanic substrate under dry conditions in slope habitat between approximately 7,875 and 12,140 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Kruckeberg's sword fern *Polystichum kruckebergii*	UM			PS	Found in shaded rock crevices and rocky soils in subalpine forest and red fir forest. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Nuttall's pondweed *Potamogeton epihydrus* ssp. *nuttallii*	UM, YV, MG, SF			PS	Occurs in freshwater marsh habitats. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Robbins' pondweed *Potamogeton robbinsii*	OC			PS	Found in lakes and other deep water emergent wetlands. No reported occurrences, and suitable habitat for this species does not occur within the planning corridor.
Silver-weed cinquefoil *Potentilla anserina* ssp. *anserina*	MG, SF			PS	Occurs in wet, often alkali areas, in montane coniferous forest between 3,960 and 8,250 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Nuttall's alkali grass *Puccinellia nuttalliana*	OC			PS	Occurs in alkaline places, in mixed evergreen forest, sagebrush scrub, yellow pine forest. No reported occurrences, and suitable habitat for this species does not occur within the planning corridor.
White beaked rush *Rhynchospora alba*	UM, YV, MG, SF			PS	Found in fens and bogs and freshwater wetlands almost always in wetlands. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Snow willow *Salix reticulata*	MG			PS	Restricted to the Sierra Nevada crest in Yosemite National Park and adjacent alpine slopes. No reported occurrences, but suitable habitat for this species occurs within the planning corridor
Weak saxifrage *Saxifraga debilis*	UM			PS	Found in upper montane forests with rocky moist soils Known population of this species occurs within the planning corridor (NPS 1985c).
Wood saxifrage *Saxifraga mertensiana*	YV			PS	Endemic to northern and central Sierra Nevada. Grows on mossy rocks and moist cliffs. Known population of this species occurs within the planning corridor (NPS 1985c).

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Bog saxifrage *Saxifraga oregana*	UM			PS	Occurs in yellow pine, red fir, lodgepole, and subalpine forest, in meadows, seeps and under wet conditions, almost always in wetlands between 3,500 and 11,000 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Yosemite bulrush *Scirpus clementis*	UM			PS	Occurs in subalpine forest, alpine fell-fields, lodgepole forest, meadows, and seeps between 8,000 and 12,000 feet in elevation.
Bolander's skullcap *Scutellaria bolanderi*	SF			PS	Occurs in gravelly soils along stream banks and in oak and pine woodlands. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Clark's ragwort *Senecio clarkianus*	YV, MG, SF			PS	Found in damp meadows between 4,620 and 8,910 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Streambank butterweed *Senecio pseudaureus* var. *pseudaureus*	UM, YV, MG, SF			PS	Found on stream banks and meadows between 7,920 and 10,890 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Groundsel *Senecio serra* var. *serra*	MG			PS	Found in streambanks and meadows between 7,920 and 10,890 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Giant sequoia *Sequoiadendron giganteum*	YV, SF			PS	Grows in three discrete groves in the park, has also been planted in historic and recent landscaped areas. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Small bur-reed *Sparganium natans*	UM, YV, MG, SF			PS	Occurs in freshwater wetlands, in lake-margin and edge habitats, almost always in wetlands under natural conditions. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Ladies' tresses *Spiranthes porrifolia*	YV			PS	Found in wet meadows. Known population of this species occurs within the planning corridor (NPS 2004l).
Bladdernut *Staphylea bolanderi*	MG			PS	Found in chaparral, foothill woodland, and yellow pine forest in canyon habitats up to 4,500 feet in elevation. Known population of this species occurs adjacent to the planning corridor (NPS 1985c).
Obtuse stellaria *Stellaria obtusa*	UM			PS	Found in red fir forest under moist conditions between 6,000 and 7,000 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Western tofieldia *Tofieldia occidentalis* ssp. *occidentalis*	MG, SF			PS	Occurs in wet meadows and bogs in montane coniferous forest below 10,230 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Pacific starflower *Trientalis latifolia*	YV, MG, SF			PS	Found in mixed evergreen forest, redwood forest, and yellow pine forest, equally likely to occur in wetlands or nonwetlands up to 4,500 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Bowl clover *Trifolium cyathiferum*	YV, MG, SF			PS	Occurs in red fir, yellow pine, and mixed evergreen forest in moist conditions, usually in wetlands, but also in nonwetlands up to 8,000 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Trillium *Trillium angustipetalum*	SF			PS	Found in meadows and moist grasslands. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.

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Giant trillium *Trillium chloropetalum*	SF			PS	Found in moist woodlands. Known population of this species occurs within the planning corridor (NPS 1985c).
Coast Range triplet-lily *Triteleia lugens*	MG, SF			PS	Found in chaparral and mixed forest edges. No reported occurrences, but suitable habitat for this species occurs within the planning corridor
Lesser bladderwort *Utricularia minor*	UM, YV, MG, SF			PS	Occurs in shallow water; almost always in wetlands. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Red huckleberry *Vaccinium parvifolium*	MG, SF			PS	Found in redwood forest, red fir forest, mixed evergreen forest in moist conditions in canyon habitats up to 7,000 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Cusick's speedwell *Veronica cusickii*	UM			PS	Occurs in alpine boulder and rock field, meadows, subalpine coniferous forest, and upper montane coniferous forest. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Common viburnum *Viburnum ellipticum*	MG, SF			PS	Found in yellow pine forest and chaparral up to 4,500 feet in elevation. No reported occurrences, but suitable habitat for this species occurs within the planning corridor.
Hall's wyethia *Wyethia elata*	SF, YV, MG			PS	Endemic to the central and southern Sierra Nevada Occurs in open deciduous woodlands and coniferous forests. Known population of this species occurs within the planning corridor (NPS 2004l, NPS 1985c).
Whitneya *Whitneya dealbata*	MG			PS	Located in open montane forests and dry meadows and slopes. No reported occurrences, but suitable habitat for this species occurs within the planning corridor

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b Status:
USFWS
FE = federally endangered
FT = federally threatened
FD = federally delisted (status to be monitored for at least five years)
FCL = federal candidate for listing
FC = federal species of concern
FLC = federal species of local concern
State
CE = California endangered
CT = California threatened
CSC = California species of special concern
R = California rare
Park
PS = Yosemite Park sensitive
PW = Yosemite Park watch list

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Appendix E

Potential Cumulative Actions

Appendix E: Potential Cumulative Actions

The following past, present and reasonably foreseeable projects were included in the cumulative effects analysis documented in Chapter V.

Reasonably Foreseeable Actions

Agency Name: National Park Service

Project Name: **Curry Village and East Yosemite Valley Campgrounds Improvements**

Description: A site plan is being developed for east Yosemite Valley to implement actions called for in the *Yosemite Valley Plan*. The project area generally extends south of the Merced River from the eastern boundary of Housekeeping Camp to Happy Isles, and encompasses the area along Tenaya Creek for proposed campsites. The site plan will ensure that all related actions proposed for the east Valley are implemented in a logical, feasible, and cost-effective manner. Most of the actions will not begin for several years, but in the meantime, the site plan will result in a more detailed picture of how and in what order the projects in the east Valley should be implemented. Following are examples of the many actions identified in the *Yosemite Valley Plan* for east Yosemite Valley:

- Reconfiguring campgrounds at Upper and Lower Pines
- Adding campsites at the new South Camp and Tenaya Creek Campgrounds
- Removing Curry Orchard and restoring the area to natural conditions
- Constructing new visitor cabins-with-bath in Curry Village
- Relocating the Curry Village ice rink
- Providing new and reconfigured food service and concession facilities at Curry Village
- Relocating the concessioner stable
- Converting Southside Drive to two-way traffic
- Constructing a fire station in the Curry Village area

A Finding of No Significant Impact was issued in February 2004.

Agency Name: National Park Service

Project Name: **El Portal Concept Plan**

Description: The *Yosemite Valley Plan* calls for relocating employee housing, administrative offices, and parking from Yosemite Valley to El Portal. The Concept Plan will provide a comprehensive site plan for the specific layout and design of administrative facilities, including employee housing, offices, and parking areas in the El Portal area. This plan will address the specific functions and spatial requirements of the facilities that the *Yosemite Valley Plan* recommends to be located in El Portal. Although the *Yosemite Valley Plan* generally outlined the facilities that would be relocated to El Portal, it did not provide specific details for each facility or for the interrelationships between existing, redeveloped, and new facilities. The Concept Plan would evaluate these interrelationships and determine the most efficient use of the limited developable areas in El Portal.

Housing development in El Portal would include the relocation of some beds already in El Portal but within the 100-year flood zone; the relocation of National Park Service and concessioner beds from the Valley, Arch Rock, and Cascades; and the addition of new beds to accommodate current unmet needs and provide for future growth. Currently 247 beds exist in El Portal; the plan calls for 1,037.

In addition, National Park Service and concessioner administrative offices will be relocated out of the Valley. National Park Service headquarters and administrative functions would be relocated and combined with existing National Park Service operations facilities at Railroad Flat, in the western portion of El Portal. Depending on land development constraints in El Portal or other considerations, the relocated headquarter functions for both the National Park Service and concessioner could be relocated to neighboring communities.

The final area of potential development in El Portal, as outlined for the Concept Plan in the *Yosemite Valley Plan*, is the construction of parking areas. Employees who live west of El Portal along the Highway 140 corridor and work in Yosemite Valley could drive to a parking area in El Portal and take employee shuttles into the park. Approximately 60 parking spaces would be provided at El Portal for this purpose.

The development of an Environmental Impact Statement is scheduled to begin in 2005.

Agency Name: National Park Service

Project Name: **El Portal Old Wastewater Treatment Facility Removal**

This project calls for the removal of all the existing structures and the rehabilitation of the site to pre-construction conditions. Rather than remove all the concrete footings, the excavation and demolition will concentrate on removing everything to below the finished grade and breaking up all remaining concrete to allow for surface water penetration. The project will entail demolishing and removing five concrete structures consisting of 169 tons of concrete, 345 tons of asphalt walks and roads, 550 feet of cyclone fencing, associated appurtenances, archeological monitoring and site rehabilitation. Archeological mitigation, monitoring and exhumation of the culturally sensitive human remains and artifacts occurred prior to the construction of these facilities in 1962.

This project is scheduled to commence in the summer of 2006. All aspects of this project will occur compliant with a final Merced Wild and Scenic River Comprehensive Management Plan.

Agency Name: National Park Service

Project Name: **El Portal Road Improvements Project** (Segment D)

Description: As part of the road improvements, El Portal Road between Pohono Bridge and the intersection of the Big Oak Flat Road with the El Portal Road (at the west end of Yosemite Valley, also known as Segment D) would be improved. This segment of road has two narrow travel lanes, each 9.5 feet wide. Subsequent to the January 1997 flood, this road failed east of the Big Oak Flat/El Portal Road intersection and was repaired temporarily. The El Portal Road Improvements Project would widen the road to 11-foot lanes and stabilize the road shoulder adjacent to the Merced River. Road improvements would be designed to improve safety and minimize the chance of roadway failures in the future.

The development of an Environmental Impact Statement is scheduled to begin in 2005.

Agency Name: National Park Service

Project Name: **Environmental Education Campus Development Program**

Description: In 1971, Yosemite National Park developed a partnership with Yosemite Institute (a nonprofit organization) to administer the National Park Service's environmental education campus. The existing facility is located at Crane Flat, located off Tioga Road. The redevelopment of the environmental education campus has been proposed to enable the center to accommodate participants at a price structure affordable to a more diverse range of students.

The National Park Service and Yosemite Institute have initiated conceptual designs for the proposed action. One concept is to redevelop and expand the facilities at Crane Flat from the existing campus of approximately 7,000 square feet of dormitory and classroom space, able to accommodate up to 76 participants and 3 staff, to a facility of approximately 52,000 square feet, accommodating approximately 200-300 participants and 10-20 staff. Another concept includes retention of historic structures onsite and redevelopment of the remainder of the campus.

If the campus at Crane Flat is redeveloped, construction and operation of the facility has potential to affect the following types of resources:

- Water supply and wastewater disposal
- Local vegetation and wildlife, such as the great gray owl and nearby meadows
- Historic setting and structures
- Visitor use patterns, including use of the Tuolumne Grove of Giant Sequoias and nearby trails
- Local air patterns such as construction-generated dust and noise
- Transportation, including increased use of Tioga Road and potential conflict of students and vehicles along Tioga Road

Preparation of the Environmental Impact Statement is currently underway and the Record of Decision is expected to be signed in 2006.

Agency Name: National Park Service

Project Name: **Multi-Use Trail to West Yosemite Valley**

Description: Approximately 80% of Yosemite's 4 million visitors per year stop at Yosemite Valley destinations. Bicyclists, hikers, visitors using wheelchairs, and those with strollers find that the multi-use paved trail in the east Valley ends abruptly near Swinging Bridge. To continue the trail to west Valley destinations (such as El Capitan or Bridalveil Fall), users must either confront automobile traffic by traveling along the edge of a busy roadway—a potentially life-threatening safety hazard—or return to private vehicles, ending an important aspect of their recreational experience and adding to traffic noise, emissions and congestion. This project would provide an accessible trail, separate from automobile traffic, to allow convenient, safe, accessible, and enjoyable access to destinations in the west Valley. The project would be accomplished as a shared cost partnership between the National Park Service and the nonprofit Yosemite Fund cooperating association.

The project would involve the construction of 4.5 miles of new multi-use paved, wheelchair-accessible trail to points of interest in the west end of Yosemite Valley. Work would include constructing a 3-mile section of paved trail adjacent to Southside Drive from Swinging Bridge to El Capitan Bridge, and a 1.5-mile section along the roadway from El Capitan Bridge to Bridalveil Fall. The project would also include installation of 23,760 linear feet of conduit under the trail to accommodate future communication lines.

The environmental compliance process is scheduled to begin in 2005.

Agency Name: National Park Service

Project Name: **Northside-Southside Drive Repaving**

Description: Rehabilitation of Valley roadways is proposed to repair and resurface existing roadway pavement and drainage facilities. The project would not widen or realign the existing roadway. Pavement rehabilitation likely will involve some sort of in-place recycling of the existing deteriorated pavement, followed by the placement of new asphalt paving. Areas with soft or poorly draining subgrade may be excavated and replaced with better foundation materials. All drainage culverts will be examined for condition, capacity, and proper location. Culverts found to be in poor condition, undersized, and/or poorly located will be replaced in improved locations with properly sized pipes. As necessary, the drainage channels to and downstream of existing culverts will be examined for potential improvements. Existing stone masonry at culvert headwalls and outlets may be salvaged and reused. Granite and reinforced concrete curb will be installed in many locations where off-road parking is adversely affecting the road shoulder and adjacent areas. In some areas, existing barriers will be replaced with curbs. Some existing gravel turnouts would be paved and curb installed to contain the parking area.

The proposed pavement rehabilitation work likely can be accomplished within the existing disturbed road corridor. However, culvert relocation or rehabilitation and the improvement of drainage channels to existing culverts may require disturbance of some new areas.

The environmental compliance process is scheduled to begin in 2005.

Agency Name: National Park Service

Project Name: **Out-of-Valley Campground Plan (Parkwide Campground Study)**

Description: The Parkwide Campground Study, conducted in 2001-2002, looked at options for both building new and expanding existing park campgrounds to account for campsites lost in Yosemite Valley during the January 1997 flood. The report has been transmitted to Congress and is currently under review. Several options were considered.

The first option is the redevelopment of several "infill" sites, which involves the better use of space within existing campgrounds to accommodate more visitors. The study also assessed the expansion of existing sites as well as the development of new sites; if all of these plans move forward, the study indicates that 788 new campsites will be created. The following areas were assessed for the proposed plans:

- Infill Sites: Bridalveil Creek, Porcupine Flat, Tamarack Flat, Tuolumne Meadows, Wawona, Yosemite Creek
- Expanded Sites: Crane Flat, Hodgdon Meadow, White Wolf
- New Sites: Foresta, Gaylor Pit, Grouse Creek, Henness Ridge, Mather Station, South Entrance

The implementation of any of the campground development listed above would include the mitigation of impacts to natural and cultural resources.

The environmental compliance process is scheduled to begin in 2006.

Agency Name: National Park Service

Project Name: **Parkwide Data Communications**

Description: This project has been developed to engineer and build a Communications Data Network using current technology to employ a single backbone hybrid system throughout Yosemite to maximize equipment use and fulfill the park's needs. The network would be used to pipeline the transfer of computer LAN data, radio communications, security and safety video systems, telephony, burglar/intrusion and fire alarm systems, traffic collection data, and telemetry throughout Yosemite on one system instead of separate, costly systems. This hybrid system would use industry standard technology, thereby maximizing bandwidth and speed to make a more efficient communication infrastructure.

The project will initially involve a frequency spectrum study to determine the requirements to implement a Communications Data Network. This study would recognize the target area of coverage for microwave technology and determine the next steps and costs associated with implementing a hybrid Communications Data Network throughout Yosemite National Park.

The environmental compliance process is due to begin in 2005

Agency Name: National Park Service

Project Name: **Red Peak Pass Trail Rehabilitation**

Description: This project will reconstruct the trail from Red Peak Pass to the Triple Peak Fork of the Merced River. Work will include rehabilitation of rock retaining wall, rip-rap tread, water breaks, terrace steps, and restoration of meadow rutting.

This project is expected to being in 2006.

Agency Name: National Park Service

Project Name: **Restore Riverine Habitat at the Sand Pit on the Merced River**

Description: The National Park Service developed the Sand Pit along the Merced River as a catchment basin to capture sand for icy roads in Yosemite National Park. Development of the 20-acre site effectively altered the former braided river in the El Portal Administrative Site. The National Park Service abandoned use of the pit after heavy damage from the January 1997 flood, but the site topography and vegetation remains highly degraded.

The Sand Pit is located in highly valued riparian habitat within the bed and banks of a Wild and Scenic River. This site is particularly valued because it contains riparian habitat below 3,300 feet, is potential habitat for federal and state-listed species, and lies along a California State Scenic Highway. The site has been designated a conservation area for the federally listed elderberry beetle. The site supports one State Rare plant.

The goal of this project is to restore natural riverine functions and processes at the Sand Pit and establish riparian vegetation and riverine scenery in the degraded site. The National Park Service would remove imported fill and restore natural hydrologic pathways. The well on the site would remain.

The projected is scheduled to begin in 2007.

Agency Name: National Park Service

Project Name: **Tuolumne Wild and Scenic River Comprehensive Management Plan**

Description: The development of the Tuolumne Wild and Scenic River Comprehensive Management Plan will bring the park into compliance with the Wild and Scenic Rivers Act, and can be used to guide actions and evaluate the potential impacts of proposed improvement projects within the river corridor. In addition, the watershed on the Tuolumne Wild and Scenic River covers over 50% of Yosemite's backcountry areas and wilderness. This plan would be a comprehensive tool for watershed planning and management of sensitive areas within the Tuolumne River watershed. In addition, this plan would include much needed natural and cultural data that have not been previously compiled for the river corridor and its watershed. These data would be used to create effective and modern management tools such as river protection overlays and much needed compliance necessary for managing resources and visitor use in the entire Tuolumne Meadows area as well as the Tuolumne River corridor. The plan would also be an important tool to examine many outstanding issues with the complicated management of the Hetch Hetchy Reservoir, including water quality management and watershed issues with the City of San Francisco.

The development of the Tuolumne Wild and Scenic River Management Plan Environmental Impact Statement is scheduled to begin in 2005.

Agency Name: National Park Service

Project Name: **Tuolumne Meadows Concept Plan**

Description: The Tuolumne Meadows, at an elevation of 8,600 feet, is the Sierra's largest subalpine meadow. Current facilities in the Tuolumne Meadows area include a 304-site campground, a visitor center, a service station, a 104-bed lodge, food services, government and concession stable operations, employee housing, a wastewater treatment plant, and several administrative buildings. These facilities support approximately 5,000 park visitors and 200 park staff daily from May through October. Although improvement or relocation has been considered for many of these facilities, there is no comprehensive plan that looks at the entire Tuolumne Meadows area as a whole and determines the desired extent and location of development. A Concept Plan will define management objectives, including resource protection goals for the entire area, and it will identify boundaries for specific types of development. This will allow implementation of management objectives and appropriate facility construction as incremental funding becomes available.

The environmental compliance process for the Tuolumne Meadows Concept Plan is scheduled to begin in 2006.

Agency Name: National Park Service

Project Name: **Update to the *Yosemite Wilderness Management Plan***

Description: The National Park Service is updating the 1989 *Yosemite Wilderness Management Plan*. The objective associated with updating the plan is to assess current conditions and trends, in order to provide stewardship direction. This plan will guide park operations for the successful management of Yosemite's designated Wilderness, which comprises almost 95 percent of the park. The plan will address land management issues within the designated Wilderness, including visitor use, vegetation associations, air resources, noise issues, watersheds, soils, cultural landscapes, and other natural, cultural, and social resource variables.

The development of an Environmental Impact Statement is scheduled to begin in 2005.

Agency Name: National Park Service

Project Name: **Visitor Use and Floodplain Restoration Program**

Description: The ecological restoration program seeks to restore natural processes to ecosystems so that portions of Yosemite Valley can recover from past human development and activities. A plan is being developed for the ecological restoration of the Upper River, Lower River, North Pines, and the northwest end of Lower Pines campgrounds; Group Camp, Backpackers Camp; Housekeeping Camp within the River Protection Overlay of the Merced River; and The Ahwahnee tennis court in Yosemite Valley. As part of this project, surveys are being conducted for archeological sites; the history of human disturbance in the area is being investigated; the former distribution of meadow, wetland, and forest communities is being investigated; a restoration prescription is being developed that recognizes the retention, modification, or removal of bridges, bicycle paths, riprap, and roads; the necessity and extent of revegetation is being determined; a revegetation strategy is being developed; and monitoring of river channel morphology is being conducted.

Ecological restoration may include:

- Removal of imported fill material
- Removal of abandoned roads and infrastructure
- Re-establishment of natural contours on the land
- Restoration of natural surface and groundwater movement
- Replanting of native vegetation
- Removal of non-native plant and animal species
- Restoration of carbon and nitrogen cycles in degraded soils

The development of an Environmental Assessment is scheduled to begin in 2005.

Agency Name: National Park Service

Project Name: **Wawona Campground Rehabilitation**

Description: The purpose of this project is to implement the *General Management Plan* goal to rehabilitate the Wawona Campground. Preliminary design plan, construction drawings, and bid documents will include the following actions: (a) rehabilitate the campground entrance and loop road and individual campsite spurs; (b) retrofit campsites and restrooms to meet accessibility standards; (c) install low-flow toilet, replace toilet partitions, repaint, install energy efficient lights and heat, replace composition roofs with metal, and insulate and winterize the restrooms in loops A and B; (d) construct showers; (e) replace exterior privacy partitions; (f) reconstruct the amphitheater; (g) remove septic tanks and leach fields; (h) extend sewer, electrical service, and telephone 1.5 miles; (i) replace existing signs with the new park sign system; and (j) prepare a vegetation management plan that includes shoreline protection and re-establishes privacy and shade in the campground.

Agency Name: National Park Service

Project Name: **Yosemite Lodge Area Redevelopment**

Description: This project is tiered off the *Yosemite Valley Plan*. The project collectively known as the Yosemite Lodge Area Redevelopment includes four separate actions as described in the *General Management Plan* and the *Yosemite Valley Plan*: redevelopment of Yosemite Lodge, redesign of Camp 4, relocation of Northside Drive, and design of the Indian Cultural Center (this action is described further as a separate project below). All actions occur in the Yosemite Lodge area of Yosemite Valley and include the following:

Yosemite Lodge will be changed from a motel type of experience to one more connected to a national park lodge experience in Yosemite Valley.

- Yosemite Lodge facilities in the river protection zone and the floodplain will be removed.
- Camp 4 will be redesigned to accommodate the expansion and improvements called for in the *Yosemite Valley Plan*.
- Northside Drive in the Yosemite Lodge and Camp 4 area will be relocated south of the lodge to reduce conflicts between vehicles and pedestrians and to provide safer pedestrian access between the lodge and the Lower Yosemite Fall area.
- Through a cooperative agreement with the American Indian Council of Mariposa County, Inc., an Indian Cultural Center will be established at the site of the last historically occupied Indian village in Yosemite Valley (just west of Camp 4 and Yosemite Lodge). See the project description below.

An Environmental Assessment was prepared for this project in September 2003 and a Finding of No Significant Impact was issued in February 2004.

Agency Name: American Indian Council of Mariposa County, Inc. (Southern Sierra Miwuk Nation)

Project Name: **Indian Cultural Center**

Description: An Indian Cultural Center would be established by the American Indian Council of Mariposa County, Inc. (Southern Sierra Miwuk Nation) at the site of the last-occupied Indian village in Yosemite Valley (west of Camp 4). This center would provide a location for culturally associated Indian people to conduct traditional ceremonies and to practice and teach techniques of traditional lifeways. While the center would be open to the public, access might be limited during special ceremonies. Some public interpretation would occur, but this cultural center would not replace the primary educational function of the current Indian Village of Ahwahnee at Yosemite Village.

Facilities at the Indian Cultural Center would consist of structures and landscape features typical of an Indian village from the mid- to late-19th century. One large, partly subterranean ceremonial roundhouse and a smaller sweatlodge would be constructed. Approximately 15 cedar bark umachas (conical houses) would be built in the vicinity of the roundhouse and sweatlodge. Plants important for food, basketry, and medicinal uses may be grown. Existing archeological features, such as mortar rocks, would remain in place and be incorporated into the village design. The last extant structure from the original village, a small cabin (the former Westley and Alice Wilson home) currently being used as a National Park Service office, would be moved back to the village and adaptively reused as the cultural center office. A new kitchen and restroom facility would be constructed. Utilities (water, sewer, propane, unimproved road access, and electrical service) would be provided. Screening would be established where necessary to visually separate the cultural center and Northside Drive, Yosemite Lodge, Camp 4, and the Valley Loop Trail. The Valley Loop Trail could be relocated to a route south of the cultural center to minimize intrusions. Overnight parking for scheduled activities would be provided at the Indian Cultural Center or other administrative areas.

The environmental compliance for this project was finished in September 2003. The American Indian Council of Mariposa County, Inc. is presently preparing fundraising plans and activities to support this project.

Agency Name: National Park Service

Project Name: **Yosemite Village Interim Parking Improvements**

Description: In keeping with the actions outlined in the *Yosemite Valley Plan*, an interim project is needed to improve the visitor experience and park operations at the Yosemite Village main day-visitor parking area. The parking area is located south of Yosemite Village and east of Sentinel Bridge, between the Merced River and Northside Drive. This area has hosted a variety of uses over the past 100 years, and has historically been referred to as Camp 6.

The project will include some or all of the following components:

- Parking for day visitors, including recreational vehicles and disabled persons
- The relocation of tour bus loading and unloading facilities
- Roadway realignments to improve vehicular and pedestrian traffic circulation and safety
- Pedestrian/bicycle paths to improve pedestrian/bicycle traffic circulation and safety
- Valley shuttle bus service operations and facilities
- Interpretation facilities, including wayfinding signs
- Other visitor facilities, such as restrooms

The development of an Environmental Assessment is scheduled to begin in 2005.

Present Actions

Agency Name: National Park Service

Project Name: **Cook's Meadow Ecological Restoration**

Description: This project is restoring a dynamic and diverse wetland ecosystem. The Cook's Meadow restoration project involves the following actions:

- Filling four drainage ditches created by early Euro-American settlers
- Removing a raised, abandoned roadbed and a trail that bisected the meadow
- Reconstructing the trail on an elevated boardwalk that now allows water to flow freely and reduces foot traffic on sensitive meadow plants
- Installing culverts under Sentinel Road to direct runoff into the meadow and restore the natural flow of water from the Merced River during seasonal periods of high water
- Reducing non-native plant species encroaching on native species by using manual, mechanical, and chemical control methods

Project completion is expected at the end of 2005.

Agency Name: National Park Service

Project Name: **Curry Village Employee Housing**

Description: This project includes the design and construction of new employee housing and related facilities to accommodate approximately 217 concessioner employees in the area west of Curry Village in Yosemite Valley. This housing will replace concessioner housing lost in the January 1997 flood. The employee housing units have been designed in accordance with the character of the area, with particular focus on the Curry Village Historic District. The scope of this housing project includes providing parking and access, an employee wellness center, concessioner housing, management offices, maintenance facilities, postal facilities, and housing-related storage.

The compliance for this project was completed in 2004 and construction is expected to begin in 2005.

Agency Name: National Park Service

Project Name: **Happy Isles Dam Removal**

Description: The Merced River supports one of the last unaltered, high-elevation aquatic ecosystems in the Sierra Nevada. Several small impoundments exist on the river that degrade the quality of the quality of the aquatic systems and depreciate its integrity as a Wild and Scenic River. The Happy Isles Dam impoundment, located at the eastern end of Yosemite Valley, has been abandoned since the mid-1980s. The remaining infrastructure consists of a low rock and concrete dam, two steel-reinforced concrete and iron diversion gates, numerous pipes above and below ground near the dam, and an 8-foot by 12-foot granite powerhouse foundation. The dam and diversion gates cause a large eddy and scour pool (100 feet wide by 15 to 20 feet deep) directly upstream of the obstruction, which dramatically alters local hydrology, water chemistry, and ecology. The project consists of removing the Happy Isles dam and associated infrastructure and revegetating the riverbanks to prevent post-project bank erosion.

This project is currently ongoing.

Agency Name: National Park Service

Project Name: **Happy Isles to Vernal Fall Trail Reconstruction**

Description: This project proposes to reconstruct 5,400 linear feet of the Vernal Fall Trail from Happy Isles to the base of the Mist Trail stairs. Actions include constructing an average tread width of seven feet, rebuilding trail walls, redistributing old pavement as a sub-base, and resurfacing. On steeper sections of the trail, improved traction will be provided for pedestrians. A functioning drainage system will be established in the trail corridor by paving water breaks and constructing rock drainages to channel water away from the trail.

Project completion is expected in November 2005.

Agency Name: National Park Service

Project Name: **Lower Yosemite Fall Project**

Description: This project consists of improving and rehabilitating the physical infrastructure at the 56-acre Lower Yosemite Fall area. The project work includes rebuilding/rehabilitating trails; removing several trail segments; rebuilding/rehabilitating five pedestrian bridges; constructing one new pedestrian bridge; removing one pedestrian bridge; removing the existing parking area and revegetating it to natural conditions; constructing a new shuttle bus stop; replacing/relocating the restroom; creating new access points; fabricating and installing new directional signs; creating a meeting area for groups; restoring portions of forest and creekside habitat to natural conditions; installing amenities such as bike racks, picnic tables, public telephones, trash cans, and wayfinding signs; enlarging the viewing areas near the base of the fall; and providing educational exhibits.

This improvement project will enhance a world-class visitor experience, create a loop trail system that is fully accessible to people with mobility impairments, reduce the perception of crowding and congestion at main views and along the trail, and improve the hydrology of the braided stream system by replacing the narrow bridges that replace the natural stream flow.

To address removal of the tour bus loading/unloading and parking area from the Lower Yosemite Fall area, replacement loading/unloading and parking spaces will be provided for tour buses. Long-term tour bus loading and unloading would occur at the future new transit center in Yosemite Village.

Project completion is expected in 2005.

Agency Name: Mariposa County

Project Name: **Mariposa County General Plan (Update)**

Description: The Draft Mariposa County General Plan will update countywide zoning ordinances and related implementing documents. This update is intended to allow Mariposa County to comply with current California law. Specifically, it is intended that this would allow Mariposa County to comply with changes to state law that have changed since the 1980 General Plan was adopted. This update will follow established public involvement protocol and may respond to countywide land-use issues.

The *Draft Mariposa County General Plan* was most recently updated in January 2004 and is projected for completion in January 2005.

Agency Name: National Park Service

Project Name: **Parkwide Invasive Plant Management Plan**

Description: Today there are over 150 non-native plant species in Yosemite National Park, which is about 10% of the park's flora. Of these, 28 species are listed for control by the U.S. Department of Agriculture, California Department of Food and Agriculture, or California Exotic Pest Plant Council. Species targeted for control in Yosemite include bull thistle, mullein, yellow star thistle, spotted knapweed, perennial pepperweed, purple vetch, rose and burr clovers, Himalayan blackberry, white and yellow sweetclover, non-native wildflowers, and escaped landscaping plants such as foxglove, ox-eye daisy, pink mullein, French broom, tree-of-heaven, and black locust.

The current control program includes using Geographic Positioning System (GPS) technology to map plant populations. Crews then remove plants using a variety of techniques, including hand-pulling. Treated areas are photographed and re-visited each year to assess the results and provide follow-up treatment.

The proposed Parkwide Invasive Plant Management Plan will define a set of comprehensive programs, including the following:

- Education and focused research
- Prioritized prevention and control efforts using a variety of techniques and appropriate mitigation measures
- Systematic monitoring and documentation of invasive plant status and the results of management efforts
- Restoration of ecosystems altered by invasive plants

Control methods being considered include some combination of the following: hand-pulling or using various machines to try and remove plants; releasing predatory insects or fungus to attack plants; educating users and staff about preventative measures; and using chemical treatments derived from natural products like vinegar, or manufactured chemicals like glysophate. Program goals include eradicating (or at least controlling) invasive plant species; preventing new invasions; restoring and maintaining desirable plant communities and healthy ecosystems; enhancing the visitor experience; and educating park staff, partners, and users.

The plan should be completed, and an environmental assessment produced for public review by fall of 2005.

Agency Name: National Park Service

Project Name: **Replacement/Rehabilitation of Yosemite Valley Sewer Line**

Description: This project includes the design and repair of the Yosemite Creek Lift Station Sewer Force Main under Northside Drive from Yosemite Creek Lift Station to the Valley Woodlot, a distance of approximately 4 miles. This project provides for the excavation and removal of the existing pipeline and replacement with high-density polyethylene pipe within the same trench. All appurtenances, valves, and drains would be replaced. In addition, this project includes repair and/or replacement of 29 sanitary sewer manholes, completion of 600 feet of slip lining, and spot repairs of the gravity trunk main in the El Portal area. It includes temporarily bypassing the existing alignment and reconstructing all drains and culvert crossings.

Project implementation is expected in early 2005.

Agency Name: National Park Service

Project Name: **Resources Management Building**

Description: The National Park Service proposes to construct an approximately 8,500 square-foot, two-story building adjacent to the existing maintenance/warehouse complex and to make improvements to a parking lot at Railroad Flat in the El Portal Administrative Site. The new building will house National Park Service resources management and science staff.

Project implementation began in December 2004.

Agency Name: National Park Service

Project Name: **South Fork Bridge Replacement**

Description: The South Fork Bridge spans the South Fork of the Merced River and is located on the Wawona Road (Highway 41) within the Wawona developed area. The original triple-span bridge is 134-feet-long and 29-feet-wide with two 11-foot-wide travel lanes, and consists of steel girders, a laminated timber deck, and an asphalt surface. The bridge is supported by two unreinforced masonry/cobble abutments and two reinforced instream piers. Damage over the years led to the closure of the bridge in 1998 after a temporary bypass bridge was installed to serve in the interim until the bridge is replaced. This bypass bridge has served beyond its original intent.

The bridge piers and abutments are currently obstructing the flow on a Wild and Scenic River. The proposed single-span structure would improve the free-flowing condition on the South Fork of the Merced River. In addition, one-third of park users travel to the park via Highway 41 and Wawona Road, thereby making the replacement an important component of Yosemite National Park's transportation concerns.

Construction on the bridge project is expected to begin in the spring of 2005.

Agency Name: National Park Service

Project Name: **Utilities Master Plan/East Yosemite Valley Utilities Improvement Plan**

Description: The existing utility infrastructure serving Yosemite Valley was identified in the *Yosemite Valley Plan* as a potential problem due to its age, condition, inadequate capacity, inaccessibility to future facilities, and inappropriate location in environmentally sensitive areas. The National Park Service completed a *Utilities Master Plan* for the east Yosemite Valley in 2003. This plan incorporated information on existing utility conditions and required repairs identified in the *Yosemite Valley Sanitary Sewer Capital Improvement Plan*, completed in 2002. The *Utilities Master Plan* assessed the current condition of utilities (water, wastewater, electric, and communications) in the Valley and the future Valley utility needs based on facilities proposed in the *Yosemite Valley Plan*. The *Utilities Master Plan* was developed to allow efficient relocation and upgrading of utility systems to provide for utility needs while reducing long-term environmental impacts from utility repair and maintenance activities.

An Environmental Assessment on the *Utilities Master Plan* was completed in June 2003 and a FONSI was signed in October 2003. Implementation of the utility improvements will occur in three phases over 10 years. Construction of phase 1 of the improvements is expected to start in 2005.

Agency Name: Mariposa County

Project Name: **Yosemite Motels Expansion**

Description: This project site is located along the north and south side of Highway 140 at the existing Yosemite View Lodge development, within the El Portal Town Planning Area. Conditional Use Permit #268 was approved by Mariposa County on May 5, 2000, for a three-story, 63-unit motel and a 2,417-square-foot Activity/Guide Center. Access to the motel and Activity/Guide Center would be from the south side of Highway 140.

Construction began in the fall of 2004.

Agency Name: National Park Service

Project Name: **Yosemite Valley Shuttle Bus Procurement**

Description: As called for in the *Yosemite Valley Plan*, a new fleet of low-emissions, low noise, fuel-efficient shuttle buses have been purchased to replace the existing fleet of 1986 diesel buses currently servicing Yosemite Valley. The recommendation of hybrid electric-diesel buses was based on findings that they result in 50 to 60% fewer emissions than conventional diesel buses, with an improvement in fuel economy and noticeably quieter operations.

The new buses will be in use in 2005.

Agency Name: National Park Service

Project Name: **Yosemite Valley Shuttle Bus Stop Improvements**

Description: This project consists of the preparation of preliminary design plans, environmental compliance documents, and construction drawings; the construction of six 10 by 80-foot concrete braking pads; and the rehabilitation or replacement of 94,000 square feet of asphalt road approaches.

Construction is expected to begin in late 2004 or early 2005.

Past Actions

Agency Name: National Park Service

Project Name: **Cascades Housing Removal**

Description: The Cascades area houses became cost prohibitive to maintain because of substandard construction and inadequate site development (drainage) and non-compliance to construction codes. The houses contained asbestos and lead paint concerns; abatement costs would have been prohibitive. Removal of these structures was deemed compatible with park values, and the *General Management Plan* targeted these structures for removal. While the houses were nominated for the Historic Register, they were approved for removal. The removal included the complete removal of structures and foundations, while significant historical components were saved.

Five housing units were removed and area vegetation was restored. This project was completed in 2004.

Agency Name: National Park Service

Project Name: **Cascades Diversion Dam Removal**

Description: The Cascades Diversion Dam was located on the main stem of the Merced River at the far west end of Yosemite Valley. The dam was a timber "crib" structure with associated concrete abutments. Removing the dam was part of the overall intent of the Merced River Plan and *Yosemite Valley Plan* to restore free-flowing conditions to the Merced Wild and Scenic River. In its deteriorated condition, the dam presented a significant public health and safety hazard due to the potential for uncontrolled collapse. Cascades Diversion Dam was located adjacent to El Portal Road.

Removal of the structure and related facilities was completed in 2004.

Agency Name: National Park Service

Project Name: **El Portal Road Improvements Project, Segments A, B, and C**

Description: The El Portal Road Improvements Project for Segments A, B, and C was conducted to stabilize the roadway, reduce the likelihood of future road closures associated with flood events, facilitate regional transportation, and improve the safety of the road. The project was implemented in response to the needs of Yosemite, as well as ongoing and reasonably foreseeable future changes in facilities, services, and user and park use. Being only one of three roadways providing access to Yosemite Valley, El Portal Road handles a quarter of the traffic to Yosemite National Park. The El Portal Road is sometimes the only access to Yosemite Valley during the winter.

The severe flooding that occurred from January 1 to 3, 1997, damaged El Portal Road in 21 locations and weakened it in at least 30 others. Erosion destabilized many sections of the guardwall, roadbed, and fill slope (or downslope, i.e., the area of fill beneath the roadbed sloping down to the river). Road access was restricted prior to the start of Memorial Day weekend 1997 while emergency repairs were made.

Today the El Portal Road is essentially as it was in the late 1920s; a two-lane roadway with 9-foot lanes and a 1-foot shoulder. In addition to the January 1997 flood, several other flood events have damaged the road over the years. Since its construction, the road sustained serious flood damage eight times, requiring the repair of various components of the road; this damage rendered many culverts, gutters, and sections of pavement inadequate.

The improvements included widening travel lanes, repaving the road, rebuilding the guardwall to meet safety standards, increasing lateral clearance by removing rock from the cut slope, decreasing sharp curves by realigning the roadway, improving road drainage, revegetating the corridor, and constructing retaining walls.

This project was completed in 2000.

Agency Name: National Park Service

Project Name: **Fire Management Plan**

Description: The National Park Service prepared a new Yosemite National Park *Fire Management Plan* to replace the 1990 *Fire Management Plan*. The objectives of the plan are to improve ecosystem health, enhance public safety, and provide guidance to park operations for successfully integrating fire with other vegetation management principles. The plan addresses prescribed fire, wildland fire, and community fire protection services. It also addresses parkwide fire issues and considers effects to burn units; vegetation associations; air resources; watersheds; soils; cultural landscapes; and other natural, cultural, and social resource variables.

This plan was completed in the fall of 2004.

Agency Name: National Park Service

Project Name: **Happy Isles Gauging Station Bridge Removal**

Description: The Happy Isles Gauging Station Bridge spanned the Merced River in the east end of Yosemite Valley. The bridge was badly damaged during the January 1997 flood and was deemed unsafe by representatives of the Federal Highway Administration. The bridge began to show signs of immediate failure in 2000 when a large sinkhole appeared on the west abutment. Due to the threat to public health and safety, the bridge was removed in the fall of 2001, thereby improving free-flow of the Merced River. The east abutment was retained to protect the operation stream flow gauge.

The bridge was removed in the fall of 2001.

Agency Name: National Park Service

Project Name: **Happy Isles Fen Habitat Restoration Project**

Description: The Happy Isles Fen is a 2-acre wetland immediately west of the Happy Isles Nature Center in east Yosemite Valley. In 1928, the National Park Service filled in about 3 additional acres of the fen to create a parking lot. The asphalt parking lot was removed in 1970, though imported fill remained. The area impacted by parking lot construction was restored to wetland conditions by removing imported fill and associated upland vegetation, and revegetating with native wetland plants.

This project was completed in the fall of 2003.

Agency Name: National Park Service

Project Name: **Merced River Ecological Restoration at Eagle Creek**

Description: Eagle Creek flows into Yosemite Valley immediately west of the Three Brothers rock formations and joins the Merced River about one-half mile downstream from Yosemite Lodge. The creek banks of the reach of Eagle Creek between Northside Drive and the Merced River are badly eroded and only sparsely vegetated, partly due to trampling by pedestrians. The eroded riverbank was recontoured, then revegetated; the trampled river terrace was decompacted; and fences were constructed to direct visitors to sandbars for river access. The ecological restoration effort involved the following:

- Plug remaining portions of abandoned sewage lines with concrete and remove the manhole and the concrete structure that crosses the creek bed.
- Restore the eroded creek channel using methods previously tested on the banks of the Merced River. Restoration techniques require building up the bank with willow cuttings, woody debris, rock, and mulch.
- Revegetate the bank of Eagle Creek with native shrubs, cuttings, and seeds.

Redirect visitors to access the river in a more appropriate location that will not cause bank erosion.

This project was completed in 2003.

Agency Name: National Park Service

Project Name: **Rehabilitate Yosemite Valley Campground Restrooms**

Description: This project rehabilitated 19 six-stall restrooms in Upper Pines, Lower Pines, and North Pines Campgrounds, as well as the 15- to 20-foot walkway approach to each restroom. Work included replacement of staff partitions by installing graffiti-resistant surfaces, painting of exterior trim and interior walls and floors, replacement of mirrors and toilet paper dispensers, repair of outside privacy screens, improvements to meet Americans with Disabilities Act accessibility requirements (replacement of entry doors, installation of grab bars and tilted mirrors as necessary), replacement of wall vents, replacement of signs, replacement of electric service panels, improvement of lighting, and replacement of fill material for walkway approaches.

This project was completed in 2004.

Agency Name: U.S. Forest Service and Bureau of Land Management

Project Name: **South Fork and Merced Wild and Scenic River Implementation Plan**

Description: The U.S. Forest Service and the Bureau of Land Management developed a joint *South Fork and Merced Wild and Scenic River Implementation Plan* in 1991 for the segments of the main stem and South Fork of the Merced River that are under the jurisdiction of these agencies. The segments include a 15-mile portion of the main stem extending from the El Portal Administrative Site to a point 300 feet upstream of the confluence with Bear Creek, a 21-mile segment of the South Fork from the park boundary to the confluence of the Merced River, and a 3-mile segment of the South Fork just upstream of Wawona, where the National Park Service has jurisdiction over the north side of the river and the U.S. Forest Service has jurisdiction over the south side. The plan calls for the long term protection of natural and cultural resources, and managing the area for the use and enjoyment of visitors in a way that will leave the resource unimpaired for future use and enjoyment as a natural setting.

This plan was completed in 1991.

Agency Name: National Park Service

Project Name: ***Yosemite Wilderness Management Plan***

Description: The *Yosemite Wilderness Management Plan* provides guidance to park operations for successfully managing Yosemite's designated Wilderness, which comprises almost 95 percent of the park. The plan addresses land management issues within the wilderness, including visitor use, vegetation associations, air resources, noise issues, watersheds, soils, cultural landscapes, and other natural, cultural, and social resource variables.

The plan was implemented in 1989.

Agency Name: Counties—Mariposa, Merced, Mono; National Park Service; U.S. Forest

Service; California Department of Transportation (Caltrans); U.S. Department of Transportation.

Project Name: **Yosemite Area Regional Transportation System (YARTS)**

Description: YARTS is a collaborative, interagency effort that began in 1992 to investigate the feasibility and implementation of regional bus service. YARTS is not intended to replace automobile access to Yosemite National Park and does not support a ban on auto access to the park. The system has been designed to offer voluntarily used services between gateway communities and major destinations throughout the park. YARTS has four primary objectives:

- Increase transportation options

- Reduce reliance on automobiles
- Support local economies
- Improve regional air quality

The target market for YARTS service includes those visitors staying overnight in the gateway communities and employees working at Yosemite National Park who live in the gateway communities.

Regional bus service began in 2000.

Agency Name: National Park Service

Project Name: **Yosemite Valley Plan**

Description: The National Park Service Pacific West Regional Director signed the Record of Decision for the *Final Yosemite Valley Plan and its Supplemental Environmental Impact Statement* on December 29, 2000. The purpose of the Yosemite Valley Plan is to present a comprehensive management plan for Yosemite Valley—from Happy Isles at the east end of the Valley to the intersection of the El Portal and Big Oak Flat Roads near the Cascades area at the west end. It also presents actions in adjacent areas of the park and the El Portal Administrative Site that directly relate to actions proposed in Yosemite Valley. The specific purposes of the *Yosemite Valley Plan* within Yosemite Valley are to:

- Restore, protect, and enhance the resources of Yosemite Valley
- Provide opportunities for high-quality, resource-based visitor experiences
- Reduce traffic congestion
- Provide effective park operations, including employee housing, to meet the mission of the National Park Service

The Record of Decision was signed in December 2000.

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Appendix F

Summary of Public Comments and Responses

Appendix F: Summary of Public Comments and Responses

Introduction **F-3**

- Public Comments and Responses F-3
- Results of Draft Review Comments F-3
- How To Use This Document F-4

Concerns, Comments, and Responses **F-5**

- Planning Process and Policy F-5
  - Planning Process F-11
  - Clarity of Planning Documents F-11
  - Planning Goals F-20
  - Criteria for Selection of Planning Goals F-22
  - Science/Resource-Based Decision-Making F-25
- Relationship to Other Planning Efforts F-30
  - General Management Plan F-33
  - Yosemite Valley Plan F-36
- Implementation Plans and Projects F-40
  - Lower Yosemite Fall Project F-44
  - Yosemite Lodge Area Redevelopment Project F-45
- Applicable Laws and Regulations F-46
  - Applicable Laws, Executive Orders, Policies, Guidelines F-47
  - National Environmental Policy Act and CEQ Regulations F-48
  - Wild and Scenic Rivers Act F-51
- Consultation and Coordination F-53
  - Public Involvement F-54
  - Written Comments F-64
  - Public Meetings F-64
- Alternatives F-66
  - Alternatives – Development Considerations F-67
  - Range of Alternatives F-68
  - Alternative 1— No Action Alternative F-70
  - Alternative 2—VERP Program with Interim Limits F-71
  - Alternative 3— VERP Program with Segment Limits F-75
  - Alternative 4— VERP Program with Management Zone Limits F-76
  - Multiple Alternatives F-77
- Other Alternatives F-80
  - Alternatives Not Considered in the Planning Document F-80
  - Alternatives Considered but Dismissed F-82
  - New Alternatives F-84
- Cumulative Effects Analysis F-88
- Park Resources F-90
  - Conflicts Between Resources F-92
  - Ecosystem Processes F-93
  - Water Resources F-95
  - Wetlands F-98
  - Vegetation (not rare, threatened, nor endangered) F-98
  - Exotic Species F-100
  - Human/Wildlife Conflicts F-102
  - Rare, Threatened, and Endangered Species F-104

- Air Quality ... F-104
- The Sound Environment ... F-107
- Scenic Resources – Visual Quality ... F-108
- Cultural Resources ... F-108

Special Land Designations ... F-133
- Outstandingly Remarkable Values ... F-134
- Boundaries ... F-139
- Management Zones ... F-143
- Wawona/Section 35 ... F-147

Visitor Experience ... F-147
- Visitor Use Management ... F-148
- Visitor Activities ... F-149
- Carrying Capacity ... F-152

Access ... F-154
- Limiting Access ... F-157
- Reservation System ... F-168
- Special Populations Access ... F-171
- Environmental Justice ... F-172
- Special User Groups ... F-174
- Recreation ... F-174
- Climbing and Mountaineering ... F-175

Visitor Services ... F-176
- Site Design and Landscaping ... F-180
- Health and Safety ... F-180
- National Park Service Interpretive Services ... F-181
- Other Services and Facilities ... F-182

Transportation ... F-183
- Traffic Condition ... F-185
- Traffic Management Operations ... F-186
- Roads, Trails, and Bridges ... F-190
- Parking ... F-191
- In-Park Transportation Services and Facilities ... F-194

Socio-economic Environment ... F-195
- Concession Services ... F-210
- Employee Housing ... F-210

Introduction

This Appendix summarizes public comments submitted on the *Draft Merced Wild and Scenic River Revised Comprehensive Management Plan and Supplemental Environmental Impact Statement* (hereafter referred to as the Revised Merced River Plan /SEIS). The Revised Merced River Plan/SEIS was released for public review on January 14, and the National Park Service accepted comments through March 22, 2005. Written public comments were received at public meetings, by fax, email, and U.S. mail. During the comment period, 147 public comment letters were received. This report provides (1) a summary of public concerns expressed in the public comments received; and (2) a specific response to each identified concern.

Public Comments and Responses

Public comments received during the public comment period were reviewed and analyzed using the park's Comment Analysis and Response Database system. Analysis of public comment letters is comprised of a series of stages which require review by staff and members of the Management Team during review and processing. For example, each letter received is read to determine the discrete points the author is expressing. Each discrete sentence or paragraph is then "coded" in order to associate that "comment" with a particular resource topic or element of the plan (such as air quality or the plan's relationship to other projects).

Once all letters have been coded for individual comments, similar comments are grouped together and a "concern statement" is generated, which is intended to capture the main points of what the comments are addressing. Concern statements are worded in a way that affords the National Park Service the opportunity to respond to a requested action. Concern statements are then screened to determine whether or not further clarification needs to be made in the document or whether they call for a modification of the proposed action. In the case of the later, these types of concerns would be brought to park management for deliberation. Finally, the planning team prepares responses presenting the National Park Service's reasoning as to how and why public concerns will be incorporated into the planning process.

As a direct result of public input, all comments are made available for review on the park's web site. The posting of public comments is a result of requests made during the scoping process for this planning effort, and will continue for future planning efforts. The Comment Analysis and Response Report generated through the comment analysis and response process is included in this appendix.

For further information about how the Final Revised Merced River Plan/SEIS changed between Draft and Final, please see "Summary of How This Document Has Changed In Response to Public Comment" following the Abstract of this document.

Results of Draft Review Comments

As a result of the public comment period, the park received comments from 114 individuals, 25 organizations, 6 government agencies, 2 tribes and 1 university, including public testimony given by individuals at public meetings. A total of over 900 separate comments were received. The analysis of these comments generated about 400 general concern statements, which were categorized and considered for incorporation in the planning process. Some of the main concerns raised during the public comment period and addressed in this Final Merced River Plan/SEIS include the following:

- The relationship between the *General Management Plan* and the Merced River Plan in the context of proposed user capacity limits.
- The process for ensuring that the *Yosemite Valley Plan* and projects associated with it are reviewed for compliance with this Revised Merced River Plan/SEIS.
- The relationship between existing elements of Yosemite National Park's User Capacity Management Program, proposed visitor limits, and the Visitor Experience and Resource Protection component.
- Criteria used for the selection of Visitor Experience and Resource Protection indicators and standards and suggestions for additional indicators and standards.
- Clarification of what types of management actions would be implemented associated with the Visitor Experience and Resource Protection and what management actions would require further National Environmental Policy Act review and public involvement.
- Clarification on how visitor use limits would be implemented.
- Clarification regarding the interim facility limits and how the park would make a determination on maintaining or removing these limits.
- Concerns from culturally associated American Indian groups relating to continued access within the river corridor for traditional practices, as well as protection and enhancement of important natural and cultural resources within the entire corridor.
- Concerns from residents in local communities and American Indian groups regarding management zoning prescriptions that allow for placement of administrative facilities within El Portal and Wawona.
- Specific and general desires relating to management of Yosemite National Park's natural, cultural, physical, and social resources.
- Concerns regarding the complexity of the document and the user capacity program in particular.

The issues and concerns not addressed in this document include the desire to have the Revised Merced River Plan/SEIS address all elements of the existing Merced River Plan, the desire to have the document address specific projects, such as campgrounds or road realignments, the desire for the National Park Service to commit to a day use reservation system or other specific management actions in this document, and support or opposition of numerous specific activities or park implementation projects. All comments received during the comment period have been duly considered and are now part of the administrative record for this project.

How To Use This Document

This Response to Public Comments summary is divided into sections based upon the topics identified in the Table of Contents.

Each section includes one or more statements of public concern. These public concerns attempt to present common themes identified from comments in a statement that captures what action the public feels the National Park Service should undertake. [Note: Because all public concerns are presented, oftentimes these statements may offer contradictory direction.] Each public concern is, in turn, followed by supporting quotes from public comments referenced to original letters.

Each supporting quote is followed by an attribute which identifies the number assigned to the original letter it came from, whether the comment was made by an individual or an organization, a general description of the organization type, and a reference to the letter number and the comment number within the letter. This information appears as a parenthetical clause in the following format: organization or individual, city and state of letter – relevant planning effort – letter number. For example, "(Individual, Merced, CA - #7-3)" is a letter from an individual in Merced, California, and assigned the letter number 7; the supporting quote is from the third coded comment in the letter.

Finally, each public concern statement, and its supporting quote, is followed by the National Park Service Response.

Concerns, Comments, and Responses

Planning Process and Policy

Concern 135: The Revised Merced River Plan user capacity program should be revised to be conceptually valid and legally sufficient.

"...[National Park Service] alternatives are not conceptually valid or legally sufficient in terms of addressing visitor capacity in the Merced WSR area."
(Individual, Fort Collins, CO, Comment #73-5)

Response: The Final Revised Merced River Plan/SEIS has identified and evaluated a range of reasonable and feasible alternatives to address user capacity in Yosemite National Park based on the VERP framework. The VERP framework is a tool developed by the National Park Service to address user capacities and ensure the protection of natural and cultural resources and the visitor experience (Hoff and Lime 1997). The action alternatives evaluated in this document all adopt quantitative measures considered to be sufficient to ensure the program's effectiveness as a current measure of user capacities, consistent with the requirements of the Wild and Scenic Rivers Act. They are also intended to address the issues outlined in the Ninth Circuit Court of Appeals October 2004 ruling.

Concern 61: The National Park Service should include the issue of day use parking and campground restoration in the Revised Merced River Plan.

"In a letter (August, 2004) responding to the Scoping of the Revised Merced River Plan / EIS (RMRP), the Board of Directors of the Yosemite Sierra Visitors Bureau (YSVB) advised you (NPS) that the scope of this plan should not be so narrowly defined as to exclude the issues of adequate parking for a growing day use visitor experience and restoration of low cost, low impact campgrounds in previously disturbed areas of Yosemite Valley."
(Individual, Oakhurst, CA, Comment #49-1).

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. As such, the capacity of campgrounds in the Merced River corridor has been considered within the alternatives. However, this document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, the specific issues raised in this concern are at the wrong planning level for this document.

Concern 276: The National Park Service should accurately state the purpose and need of the Revised Comprehensive Management Plan.

"The purpose and need of the alternatives is inaccurately stated. The D. R. MRP does not tie user capacity to protecting and enhancing Outstandingly Remarkable Values. The premise of the whole plan is flawed and violates WSRA."
(Conservation Organization, Yosemite, CA, Comment #111-59)

Response: The purpose and need for the Revised Merced River Plan/SEIS is clearly articulated in Chapter I of the document. Each of the action alternatives identified and discussed in the document have been developed to specifically address the 2004 Court Order directing the National Park Service to revise the original 2000 Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. In addition, each of the action alternatives evaluated in this document incorporate measurable indicators and standards that will be monitored to ensure that the Merced River's Outstandingly Remarkable Values will be enhanced and protected.

Concern 222: The National Park Service should focus on redeveloping existing infrastructure, or place new development in already developed sites, over developing new sites.

"Human population is increasing, thus leading to inevitable development. However, the key issue is HOW this development takes place. ...I do know that it is not always necessary to build MORE, but rather build SMARTER. By this I mean, rather than dozing for more sites for structures and pavement, affecting the vitality and beauty of the valley, why not remodel the existing infrastructure?"
(Individual, Sonora, CA, Comment #90-1)

"Please ensure that your final plan restricts future development in the El Portal area to already developed sites (ie, Rancheria, Trailer Court, Motor Inns, & "downtown" by the Post Office."). In keeping with our unique "small-town" lifestyle, future development should be small scale, locally-owned, and primarily geared towards the needs of residents."
(Individual, El Portal, CA, Comment #132-5)

"Add housing and administrative units at the trailer court, the sewer plant/warehouse, and by in-filling already impacted available space in Rancheria Flat and the Motor Inns. There may also be a few existing lots in old El Portal that could be made available for long-term employees to build new homes, compatible, of course, with the cultural landscape of the area."
(Individual, El Portal, CA, Comment #132-8)

Response: The Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. The plan is programmatic and will guide future planning efforts, but does not specify the removal or construction of specific buildings. Potential decisions on redevelopment and locations for new development will be evaluated in future project implementation plans.

Concern 230: The National Park Service should continue to remove facilities out of the Valley.

"This combined with the continued removal of certain facilities out of the Valley would lessen the pressure on the river corridor."
(Conservation Organization, Oakland, CA, Comment #75-3).

Response: The National Park Service's long-term goals as outlined in the *General Management Plan* include the relocation of non-essential offices and housing from Yosemite Valley. The Revised Merced River Plan, however, is a programmatic plan that will guide future planning efforts, but does not dictate any specific action. The Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. The plan is programmatic and will guide future planning efforts, but does not specify the removal or construction of specific buildings. Potential decisions on the removal of facilities from Yosemite Valley and locations for new development will be evaluated in future project implementation plans.

Concern 236: The National Park Service should reduce development and emphasis on commercial interests in order to protect the visitor experience and natural resources.

"The amount of people using the river corridor seems to be the center issue. The easiest example of how the river is NOT protected is the rafting that is a major abuse of this fragile stretch of the Merced River (ORV) with actual impact to the river banks, the river bottom (walking rafts thru shallow areas stirring up natural sediments) as hundreds of colorful rafts and people parading by create an absence of the natural beauty and peace that I expect to find at a river in a National Park."
(Individual, El Portal, CA, Comment #72-4)

"[M]ore thought [should be] put into what we really need to have a visitor friendly Yosemite National Park. I would like better alternatives that will address the need to preserve and protect the park without the enhanced commercial aspects."
(Individual, El Portal, CA, Comment #72-8)

"Yosemite is one of the most visually and aesthetically stunning locations in the world--the Merced River one of the most treasured Rivers. Yet this plan reflects that the Park Service does not understand the special values and the special experience to be had. Instead, the Park Service continues to treat the Merced River Plan as a bureaucratic annoyance to get out of the way so it can proceed on the continuing juggernaut of construction, commercialization, and pavement."
(Conservation Organization, Yosemite, CA, Comment #111-6)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, the specific issues raised in this concern will be evaluated in future implementation plans to the extent applicable.

Concern 238: The National Park Service should chose user capacity management actions which involve less construction.

"Solution which involve less construction are better."
(Individual, Fresno, CA, Comment #78-4)

Response: The actual management action(s) selected would depend on the particular setting and situation encountered and may or may not involve construction activities. The selected management action(s) would be subject to the appropriate level of environmental review and public involvement, as well as going through public involvement processes, such as VERP quarterly updates and annual report. However, the 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 300: The National Park Service should not allow commercial development in El Portal.

"I would not like to see any more commercial development here [in El Portal]. I feel that it would irreparably change the quiet undiscovered nature of El Portal and the river corridor here. We have something so special here; it is like no place in the world in its lack of commercial offerings. I would like to see more protection for El Portal specifically and for the whole River Corridor in general."
(Individual, El Portal, CA, Comment #133-4).

Response: The National Park Service is committed to working with the community in El Portal to determine potential development actions. The National Park Service will work to balance values important to the community while providing for the administrative needs of Yosemite National Park, for which the El Portal Administrative site was established. Paramount in this decision-making process will be protecting and enhancing the outstandingly Remarkable Values of the river. The Revised Merced River Plan is a programmatic plan that will guide future planning efforts, but does not dictate any specific action. The National Park Service was directed by the court to revise the El Portal boundary and to address a user capacity program. The El Portal boundary will guide future planning efforts by designating management zones where development would be allowed to occur within the Wild and Scenic River boundary provided that Outstandingly Remarkable Values are protected. Areas zoned 3C (park operations and administration) indicate areas that allow for development, but this does not necessarily mean all of those areas will actually be developed. More specifically, the plan does not outline specific types of development that will occur in El Portal. Specific decisions on potential commercial development in El Portal will be evaluated in the El Portal Concept Plan. This plan will require an Environmental Impact Statement, which will include public involvement through the public scoping and comment period process.

Concern 304: The National Park Service should move non-essential offices and housing from the Valley to gateway communities, rather than to El Portal, to avoid adverse impacts to Outstandingly Remarkable Values.

"Keep truly essential employee offices and housing in Yosemite Valley, but move the rest to gateway communities that are more appropriate for expansion and development...Cramming more housing, administration, commercial services, and parking lots into this narrow corridor is not compatible with a Wild and Scenic river, and would certainly impact the river's Outstandingly Remarkable Values. The limits on the numbers of employees and residents within the El Portal protection boundary should remain at or near their present levels."
(Individual, El Portal, CA, Comment #132-9)

Response: The National Park Service's long-term goals as outlined in the *General Management Plan* include the relocation of non-essential offices and housing from Yosemite Valley. The Revised Merced River Plan, however, is a programmatic plan that will guide future planning efforts, but does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. As such, the plan does not specify the removal or construction of specific buildings. Potential decisions on the removal of facilities from Yosemite Valley and the consideration of gateway communities for their relocation will be evaluated in future project implementation plans.

Concern 313: The National Park Service should develop other areas of the park besides the Valley and Wawona.

"Develop other areas besides Valley and Wawona."
(Individual, Saratoga, CA, Comment #122-4)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts for the Merced River corridor. It does not dictate any specific actions, nor does it guide actions in areas that are distant from the corridor. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. As such, the plan does not specify the removal or construction of specific buildings.

Potential decisions on the development of areas outside of Yosemite Valley and Wawona are not assessed in a programmatic plan such as this one. Development considerations will be evaluated in future project implementation plans.

Concern 336: The National Park Service should remove the golf course in Wawona and other unnatural lawns.

"The golf course in Wawona should be removed. Pesticides are used to maintain a golf course. Golf courses are the ultimate boo boo for resource protection. These chemicals (purported to be natural and safe – c'mon folks, get into the water systems. Pesticides and rivers and streams do not go together."
(Individual, Fresno, CA, Comment #128-15)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, this concern is not within the scope of this document. Potential decisions on the management of the Wawona Golf Course may be evaluated in future project implementation plans.

Concern 353: The National Park Service should focus its efforts on restoration projects which enhance the environment over projects that degrade the environment.

"I was horrified to see the trees cut next to the Yosemite Lodge and at the front of the Upper Pines campground last spring. These projects seem senseless to me, especially when other projects can be implemented that enhance the environment, rather than destroy it."
(Individual, San Francisco, CA, Comment #121-6)

"[I]n the flood plain, restoration of the permanently lost campgrounds there has progressed at a snail's pace. The area has looked like a waste land. Why has the park service not focused on restoring this area to its most natural condition, especially given that this is a great opportunity to have a development-free area that shows off beautiful riparian and meadow habitats that attract a diversity of birds and other wildlife?"
(Individual, San Francisco, CA, Comment #121-7)

Response: The National Park Service is committed to restoration efforts throughout the park. Recent projects include the restoration of Cook's Meadow, the Merced River at Eagle Creek, and the Happy Isles Fen, as well as the removal of Cascades Diversion Dam and the Happy Isles Gauging Station Bridge. Ongoing restoration projects include the removal of exotic species and bank stabilization efforts within the Merced River corridor.

The Revised Merced River Plan is a programmatic plan that has, and will continue to, guide future planning efforts, but it does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. Potential decisions on upcoming restoration projects will be evaluated in future project implementation plans.

Planning Process

Concern 245: The Revised Merced River Plan should disclose that Outstandingly Remarkable Values, such as biologic and hydrologic, are not discrete and are dependent on the larger surrounding ecosystem.

"In addition, it is important to disclose that ORVs, such as biologic and hydrologic, are not discrete. Many are dependent upon the larger surrounding ecosystem and/or species for their health and existence; and therefore need to be protected and managed as such."
(Individual, Comment #93-13).

Response: Although Merced River Plan, as amended by this document, focuses on the river, the National Park Service recognizes that in some instances issues affecting the river's Outstandingly Remarkable Values may not start and stop at the river corridor boundary. In some instances management actions will be designed to address Outstandingly Remarkable Values both inside and outside the corridor. As a result, the VERP program has been designed not only for application in the river corridor but for the park as a whole, since this is eventually how user capacity management program will be applied throughout Yosemite.

Concern 306: The Revised Merced River Plan should clearly address User Capacity to meet the requirements of the Wild and Scenic Rivers Act.

"The DRMRP does not fulfill the court's directive to clearly address User Capacity and thus meet the requirements of the Wild and Scenic Rivers Act."
(Individual, Merced, CA, Comment #117-1)

Response: The action alternatives identified in this Revised Merced River Plan/SEIS have been developed to satisfy the 2004 Court Order requiring the National Park Service to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. These alternatives identified and evaluated in this document have been developed as a means to achieve this directive, compliant with the requirements of Wild and Scenic Rivers Act, and relevant National Park Service management policies and procedures.

Clarity of Planning Documents

Concern 7: The Revised Merced River Plan should be revised to improve consistency and clarity.

"After many hours of study and review I have found this document extremely difficult to comprehend. Pertinent data comparing the alternatives are inconsistent, scattered in tables, footnotes and appendices and are almost impossible to decipher. The comparisons may be in there somewhere embedded in a two-inch thick document but I believe they are not presented in a manner suitable for meaningful public review."
(Individual, El Dorado Hills, CA, Comment #27-1)

"Overall, our central belief is that the final plan should provide greater clarity and specificity than what is now provided in the draft plan. No matter how good the intentions of Park management are (and we believe they are good), much of the public that is concerned with this plan is inherently suspicious of Park management and will likely oppose any plan unless it clearly specifies or limits future management actions. The public fears a worst case scenario - a crowded, over-developed Merced River corridor, where Nature takes second place to visitor capacity. Your burden with this plan is to clearly demonstrate how the worst case scenario cannot come true."
(Conservation Organization, Twain Harte, CA, Comment #29-1)

"The Draft Merced River Plan is a mass of contradictions, illogical statements, confusing and inconsistent jargon, and so-called "information" presented in such a way as to defy analysis. The document is internally inconsistent, rendering meaningless any public attempt to comment on content."
(Conservation Organization, Fresno, CA, Comment #30-1)

Response: The Final Revised Merced River Plan/SEIS has been revised to address concerns regarding clarity and consistency. The document has been reorganized to provide a separate background chapter on user capacity and elements common throughout the park's user capacity management program, followed by a chapter presenting the alternatives. The terminology in the document has also been clarified to more simply convey the information. However, it should be noted that this plan addresses a complex issue—user capacity—in a park that is equally complex. In Yosemite National Park, a spectrum of uses occurs in widely diverse areas resulting in varying environments being affected throughout the Merced River corridor.

Additionally, some concerns were raised over the perceived lack of comparability of the alternatives. The Revised Merced River Plan/SEIS proposes different *approaches* to addressing user capacity. Yosemite's existing user capacity tools and the VERP program are common to all of the action alternatives, yet some of the new proposed limits (and methods) vary among the alternatives. In accordance with the National Environmental Policy Act, the environmental effects of the alternatives are comparable and are analyzed and presented in the document in comparative form. Readers can understand from the environmental consequences discussions in Chapter V the differing effects of each of the alternatives on various aspects of the human environment.

Concern 12: The Revised Merced River Plan should be revised to improve the clarity of the Visitor Experience and Resource Protection component within each Alternative.

"God knows you are really trying to keep us informed and I do thank you for the attempt, but the February 2005 edition trying to explain the alternatives for the VERP whatever is really not helpful. It is crouched in the language of bureaucracy that drives me nuts -- trying to say something and not saying anything. You ask US to be specific in our responses and you feed us this mumbo-jumbo."
(Individual, Comment #3-1)

Response: The Final Revised Merced River Plan/SEIS has been revised to address concerns regarding clarity related to the user capacity component of the alternatives. The draft plan presented a detailed discussion of the user capacity issue within the alternatives chapter. As a result, the alternatives chapter was long, which made this chapter difficult to grasp for some readers. In response to this concern, the Final Revised Merced River Plan/SEIS has separated out the user capacity discussion—including the user capacity elements common to all action alternatives-- into its own stand-alone chapter (Chapter II). Thus, the alternatives are now presented on their own in Chapter III. The terminology in the document has also been clarified to try to more simply convey the information.

Concern 13: The Revised Merced River Plan should include a summary to clearly explain the alternatives and crucial elements of the plan.

"While I appreciate the in-depth effort performed by Yosemite National Park (YNP or NPS hereinafter) to meet the 9th Circuit Court of Appeal's concerns and instructions, it is essential to clearly explain in an Executive Summary those crucial elements that will inform commentator's consideration and opinions.

The key YNP zoning definitions that apply to the Merced River Corridor and that permit the reader to understand and compare the four Alternatives (as they view the maps on pages 85, 91, 97, and 105 of the pdf) are unfortunately absent from the Executive Summary -- and from the entire text and glossary. I finally found the zone definitions in Appendix A – it would have been helpful to state that location very early in the Executive Summary."
(Individual, Berkeley, CA, Comment #4-1)

"[T]he document in its present form requires at least a brief supplemental summary comparing the alternatives in a more easily understandable manner. A clearly stated summary statement comparing alternatives...would insure a more meaningful public review process."
(Individual, El Dorado Hills, CA, Comment #27-2)

"In the future, is there any possibility of providing Plans for Yosemite in 100 pages or less, such as a Summary of the various Alternatives?"
(Individual, Lincoln, CA, Comment #131-2)

Response: The Final Revised Merced River Plan/SEIS has been revised to address concerns regarding the clarity of the document. The Executive Summary in the Final Revised Merced River Plan/SEIS has been rewritten. It now captures a more complete overview of the approach taken in the alternatives, as well as summarizing their crucial elements and differentiations. The user capacity elements of the plan contains many components The Final Revised Merced River Plan/SEIS has been revised to make the text and the tables for the user capacity element more concise and clear. The tables and figures from the alternatives chapter were repeated in the Executive Summary in order to provide greater clarity and detail. The Executive Summary also presents the rationale for selecting the environmentally preferable alternative.

Concern 30: The Revised Merced River Plan should more clearly present the assumptions used for calculating daily use limits.

"As to the 18,241 figure in the 1980 GMP being used as a target, it is my understanding that figure was arrived at by counting sleeping and parking spaces in 1980. The figures for both are substantially lower now than they were then, so the 18,241 is no longer relevant. Logically, the corresponding number would be much smaller now, unless a larger number of day users being brought in by bus were assumed. (The YVP did indeed make that assumption. It is unclear what the MRP is assuming.)"
(Individual, San Francisco, CA, Comment #31-5)

Response: The Final Revised Merced River Plan/SEIS has been revised to more clearly present the assumptions used for calculating daily use limits in the tables in Appendix C. Assumptions presented with regard to interim facility limits, segment limits, and management zone limits are presented in the footnotes of each table in Appendix C. Additionally, clarification of the relationship between the 1980 *General Management Plan*, existing conditions, and the use limits presented in the Revised Merced River Plan has been clarified in the tables in Chapter III, in Chapter V, and in Appendix C.

Concern 34: The National Park Service should provide consistent information between fact sheets and the Revised Merced River Plan document regarding potential gate closures when use limits are reached.

"I found a fair amount of reference to the possible need to impose "restrictions" and "limits", but scant reference to a day use reservation system. Specifically, the NPS new Fact Sheet which is intended to provide an "overview" of the MRP, issued February, 2005, poses the hypothetical question, "Will the park dose the gates if limits are reached?" It responds to the question by saying, "Turning people away at entrance gates or otherwise closing park entrances is NOT being proposed in the preferred alternative" Yet in Table 11-9 (page 11-52) of the preferred alternative, under "Rationing and Allocation", one "tool" listed is "Limit overall number of users through entrance station quotas" Their appears to be a substantial conflict between the statement in the Fact Sheet and the statement in the MRP."
(Individual, San Francisco, CA, Comment #31-9)

"And one quick example, a fact sheet issued in February 2005, providing an overview of the MRP poses a hypothetical question. "Will the park close the gates if limits are reached?" In response to the question by saying, "Turning people away at entrance gates, or otherwise closing park entrances, is not being proposed in the Preferred Alternative." Yet on table 29, page 252 of the Preferred Alternative, under rationing and allocation, one tool listed is: "Limit overall numbers of users through entrance station quotas."
(Individual, Ahwahnee, CA, Comment #41-2)

"In some cases there are contradictions between the fact sheets and the draft plan. There are several instances when it is very difficult to cross-reference the fact sheets to the draft plan. When there are discrepancies, should people be commenting on the fact sheet or the plan? Also these sheets were discovered on a table during the road show. Since they were not mailed out how are we sure that the people who received copies of the draft plan via mail were even aware that these fact sheets exist?"
(Conservation Organization, Oakland, CA, Comment #69-6)

Response: The National Park Service recognizes this public concern. Fact sheets on park planning projects are provided to briefly highlight and summarize some of a project's major elements. These 1- to 2-page informational hand-outs are intended only to summarize information that is presented in an Environmental Assessment or Environmental Impact Statement. All fact sheets are available to the public at monthly Open Houses and public meetings for park planning projects. The online link for fact sheets is posted prominently on the park's web site at *www.nps.gov/yose/planning*. The park's electronic newsletter and Planning Update newsletter often highlight where the public can go on the web site to receive additional information. While the fact sheets are intended to summarize key elements of a specific project and highlight planning or project timelines, it is the planning document itself (i.e., the EA or the EIS, for example) that must be the focus of public comment. In the future, the National Park Service will work to more closely articulate plan elements with consistency and accuracy.

Concern 57: The Revised Merced River Plan should use the term "limit" in place of "quota" in the final document.

"We suggest use of the term "limit" in place of "quota." While we acknowledge that one definition of "quota" is "the highest number of people permitted admission," we also feel that a more common use of this term is "a production assignment". We believe that using the term "limit," in place of "quota" throughout the document will be both more clearly understood by the public, and more consistent. Alternative 2 proposes "facility limits." Rather than using a different term for alternative 3 ("segment quotas") and alternative 4 ("management zone quotas"), "limit" should be used throughout ("segment limits" and "management zone limits")."
(Conservation Organization, Twain Harte, CA, Comment #29-10)

Response: The Final Revised Merced River Plan/SEIS has been revised to address this concern. Terminology in the Final Revised Merced River Plan/SEIS has been revised, where possible, to use more common descriptions. The term "limit" has been used in the place of the term "quota," except when referring to the Wilderness Trailhead Quota System, which is an existing program in the Yosemite Wilderness.

Concern 137: The Appendix A for the Revised Merced River Plan should be relocated to the introduction section of Chapter II.

"I recommend you relocate Appendix A to the introduction part of the alternatives section in the main body and then develop and contrast your alternatives around them. This approach would allow you to adequately and clearly focus on specific areas within the WSR, their special Outstandingly Remarkable Values and different uses and variation across the year, and the broader ecological environment which sustains them."
(Individual, Fort Collins, CO, Comment #73-9)

Response: The Final Revised Merced River Plan/SEIS has been revised to address this concern. The information on management zoning prescriptions and the maps detailing the management zones adopted in the 2000 Merced River Plan have been moved up into Chapter II. This information can now be found in Chapter II, User Capacity and the Visitor Experience and Resource Protection Framework.

Concern 138: The Revised Merced River Plan should be revised to display the management objectives for each zone in table II-14.

"Most importantly, I recommend you take your Table II-14 Comparison of Alternatives and list the management zones only for the Merced WSR area down the first column, and then display the alternative user capacities for each geographic unit or even subunits within. By displaying the management objectives for each management zone in this table and the significant Outstandingly Remarkable Values, the public could better track the logic and understand the close relationship between management objectives and user capacities."
(Individual, Fort Collins, CO, Comment #73-10)

Response: The Comparison of Alternative Key Assumptions table was table II-14 in the Draft Revised Merced River Plan/SEIS, and has been changed to table III-11 in the Final Revised Merced River Plan/SEIS. In addition, table II-2 shows the management zone prescriptions, including the objectives for each zone. Because management zone objectives are addressed in table II-2, it was determined to not include the same information in two tables as requested by the commentor.

Concern 140: The Revised Merced River Plan should clarify what is included in references to the Merced Wild & Scenic River area versus inside the park in general.

"It is difficult for the reader to keep track of when you are referring to inside the Merced WSR area versus inside the Park in general (e.g., wilderness trailhead quota). Is the river corridor you often refer to always in the WSR?"
(Individual, Fort Collins, CO, Comment #73-14)

Response: The Final Revised Merced River Plan/SEIS has been revised to address this concern. The National Park Service has revised the document, where appropriate, to provide better clarification between the Merced River corridor and Yosemite National Park as a whole.

Concern 141: The Revised Merced River Plan should remove information that is not direct and significant to the management of the Merced Wild & Scenic River area.

"Relatedly, it does not appear that many items in the Superintendent's Compendium, nor many of the trailheads in the quota system, apply to the WSR area. It may be possible to considerably enhance the clarity of the SEIS and its usability by removing the information that is not truly direct and significant to the management of the Merced WSR area."
(Individual, Fort Collins, CO, Comment #73-15)

Response: User capacity management in Yosemite National Park is comprised of many components, including the Superintendent's Compendium and the Wilderness Trailhead Quota System (though it is noted that not all trailheads listed in table II-1 are within the Merced River corridor). Although all of the information within each of those components may not directly guide management of the Merced River corridor, they do guide decisions within the larger ecosystem in which the Merced Wild and Scenic River is a part. They therefore indirectly play a role in the management of the river. The document has been revised, where possible, to address this concern.

Concern 142: The Revised Merced River Plan should use standardized and defined vocabulary when defining elements of alternatives.

"I find your choice of the phrases to define your alternatives to be curious and misleading: alternative 2 offers "interim facility limits", alternative 3 offers a "fixed user limit", and alternative 4 offers a "fixed maximum use level." These terms are not contrasted or defined in your glossary and can influence the public's understanding."
(Individual, Fort Collins, CO, Comment #73-16)

"Particularly curious to me is the difference between interim and fixed. In all three alternatives there is discussion that monitoring will be undertaken and mitigating management actions implemented. This is appropriate. With new information or circumstances gained from monitoring, I believe all decisions in this SEIS are interim in a literal sense. Thus, your "fixed" alternatives (3 & 4) are no more fixed than your "interim." I think these terms are confusing, do not add anything of substance, and should be dropped, or at least clarified and contrasted in detail in the main text and glossary. Otherwise, I suspect that the public reviewers will be drawn to the illusion that interim is a softer concept and allows more change than fixed."
(Individual, Fort Collins, CO, Comment #73-17)

Response: The Final Revised Merced River Plan/SEIS has been revised to try to more simply convey the information on the various measures include within each user capacity alternative. Additional terms relating to various user capacity components have been defined in the Glossary.

Concern 173: The Revised Merced River Plan should clarify the duration of "interim limits" and clarify when the Revised Merced River Plan is actually completed.

"'COMPLETION' NOT DEFINED. The Revised Merced River Plan is mired in double-speak. The Plan admits that the Park "is in the process of pilot-testing indicators and standards and gathering baseline data" (Page 11-21). It goes on to state that "Alternative 2 would set interim limits on visitor use through specific facility limitations and implementation of... VERP... These interim limits would remain in place for up to 5 years or until the National Park Service is confident that... VERP... Is providing sound guidance... " (Page II- 3 1). Yet the following statements are unclear as to when done is done: Page 1-6 states: "The National Park Service will fulfill its requirement to revise the... Plan for the Merced River when the Record of Decision [ROD] on the Final... Is signed... In 2005." . Page 1-8 states: "This Revised Merced River Plan/SETS amends the Merced River Plan and will provide a framework for decision-making on future management actions within the Merced Wild and Scenic River corridor." . Page 1-9 states: "The Yosemite Valley Plan was developed and adopted in accordance with the Merced River Plan. Upon completion of the Revised... SETS, the National Park Service will review actions approved in the Yosemite Valley Plan to determine whether any revisions. . .would result in any changes to the Yosemite Valley Plan." Does fulfilling a requirement by signing the ROD in 2005 mean the Revised Plan is "done?" Is the mere signing of the ROD the trigger that instantly amends the 2000 Merced River Plan and the 1980 General Management Plan (GMP)? What does "completion of the Revised" River Plan mean? A signed ROD? Or does "completion" follow the lifting of the 5-year interim facility limits with full documentation as to how VERP has provided the required guidance on visitor use levels while guaranteeing protection of the Merced River Outstandingly Remarkable Values? Without a clear understanding as to when done is done, it is impossible for the public to put this Plan in perspective with respect to its relationship to other plans."
(Individual, Oakhurst, CA, Comment #55-12)

"The DEIS is confusing relative to the duration of "interim limits." The quotes below illustrate this issue. The interim facility limits proposed will remain in place until VERP is fully implemented II-31 para 2. These interim limits would remain in place for up to 5 years or until the National Park Service is confident that the VERP program is providing sound guidance on appropriate visitor use levels within the river corridor II-31 para 4. Until the VERP program is fully operational, interim user limits expressed as facility constraints and bus quotas would be put in place to ensure protection of the river's Outstandingly Remarkable Values II-32 para 1. These facility limits would be put in place while the VERP program was being refined and implemented, a process which could take up to 5 years II-33 para 1. The interim facility limits established in Alternative 2 would remain in place for up to 5 years, until the VERP program is refined and provides robust data on desired conditions II-37 para 1."
(Individual, Fresno, CA, Comment #82-10)

Response: The National Park Service will fulfill its requirement to comply with the Ninth Circuit Court of Appeal's ruling that it "must prepare a new or revised CMP that adequately addresses user capacities and properly draws the river boundaries in El Portal" when the Record of Decision on the *Final Merced Wild and Scenic River Revised Comprehensive Management Plan and Supplemental Environmental Impact Statement* is signed by the National Park Service Pacific West Regional Director and it is subsequently published in the Federal Register in 2005. Language clarifying this issue has been added to text on page I-6.

This document also further clarifies concerns related to interim limits in Alternative 2. The document now states in Chapter III that the interim limits would last for the next 5 years, while the VERP indicators and standards continue to be field tested and improved. At the end of the 5-year interim period, the National Park Service would evaluate the VERP program's effectiveness in providing park managers with the information needed to manage visitor use in a manner that protects and enhances the Outstandingly Remarkable Values. Based on this evaluation, park managers would present a report to the public documenting how the VERP program has provided the required guidance on visitor use levels and whether facility limits should be continued, modified, or eliminated. If changes proposed at this time would result in substantially different environmental consequences than were identified in the Final Revised Merced River Plan/SEIS, an appropriate level of National Environmental Policy Act compliance would be completed.

Concern 175: The Revised Merced River Plan should include maps of all parking spaces considered in the plan.

"The DEIS claims there are 2,097 day use parking spaces in Yosemite Valley. The NPS should provide maps of all parking places considered in this total in the Draft SEIS... Details should be provided, even in this "interim" period, on what constitutes a sound parking space."
(Individual, Fresno, CA, Comment #82-12)

Response: The National Park Service recognizes this request and has made these maps available upon request.

Concern 177: The National Park Service should clarify why it selected specific months for determination of limits on buses.

"How did the NPS select the appropriate "interim limits" for commercial buses? The current number of bus parking spaces in Yosemite Valley (38) is used to manage 92 commercial or transit buses per day. Data from commercial bus use from August 1996, and transit bus use from August 2000 were used to determine the maximum allowable. Why were these months selected?"
(Individual, Fresno, CA, Comment #82-14)

Response: The Final Revised Merced River Plan/SEIS has been revised to more clearly present why specific months were selected to determine limits on buses in both the tables presented in Chapter III and Appendix C. The National Park Service has based Interim Facility Limits for buses on historic peak highs for visitor use associated with commercial and transit bus use because those levels can currently and have historically been accommodated in Yosemite Valley.

Concern 178: The Revised Merced River Plan should expand the information presented in Appendix D and bring a discussion forward in the text of the document including footnoted information.

"Appendix D (User Capacity Alternative Assumptions) must be made more accessible to the reader. The information in Appendix D is critical to an understanding of the proposed alternatives. The Appendix should be expanded and brought forward into the text of the SEIS. Tables D-1, D-2, D-4, and D-5 should all be in the same format, and should be set up alongside one another for easy comparison."
(Individual, Fresno, CA, Comment #82-15)

"Table D-1 presents Estimated Daily Visitor Capacity information. Footnote "f" in this table is confusing. Is this truly the AVERAGE occupancy of lodging and campsites or the MAXIMUM POSSIBLE? I suspect the latter. The text that is footnoted should not exceed the size of the table. Suggest putting important footnoted information in separate tables to increase readability."
(Individual, Fresno, CA, Comment #82-16)

Response: The Final Revised Merced River Plan/SEIS has been revised to more clearly present information presented in the tables in Chapter III and Appendix C (Appendix D has been changed to Appendix C in the Final Revised Merced River Plan/SEIS). In order to simplify and reduce the complexity of the information presented for each alternative, supporting references and details have been placed in the appendices. The footnotes for tables presented in Chapter III have been revised to provide clarity as to where the reader may find more information about the assumptions used for tables in Chapter III.

Concern 179: The Revised Merced River Plan should include source information on current capacity levels discussed in table II-7 and table D-3.

"Table II-7, page II-36 lists Current Capacity Levels for Yosemite Valley with a segment total of 20,569. What is the source of this number? How was it derived? This information is not contained in Appendix D as stated."
(Individual, Fresno, CA, Comment #82-18)

Response: The Comparison of General Management Plan Visitor Use and Employee Housing Levels (1980) with Existing Conditions (2004) as presented in table II-7 in the Draft Revised

Merced River Plan/SEIS has been changed to table III-6: Comparison of Number of General Management Plan Facilities (1980) with Existing Conditions (Interim Facility Limits 2004) and General Management Plan Facilities in the Final Revised Merced River Plan/SEIS. This table, along with table C-3, has been revised to include source information.

Planning Goals

Concern 37: The National Park Service should only utilize newly constructed overnight accommodations once replaced facilities are no longer in service and eliminate the 18 month "transition period."

"It appears that the NPS intends, upon issuance of a Record of Decision (ROD) on the MRP, to proceed with the various construction projects which are presently enjoined. They would NOT immediately remove, upon completion of new construction, the units which were supposedly being replaced. In view of the extensive history of "temporary" facilities ending up being semi-permanent, this approach appears to be A BACK-DOOR WAY OF INCREASING OVERNIGHT ACCOMMODATIONS. THIS IS NOT AN ACCEPTABLE TACTIC."
(Individual, San Francisco, CA, Comment #31-6).

"Table D-2 footnote "d" should be clarified. What happens during this 18 month transition period? Will the stated maximum number of lodging units (1,262) and therefore the stated maximum number of overnight visitors is (4,213) be exceeded as a result of this "transition" period? These stated maximum levels should never be exceeded."
(Individual, Fresno, CA, Comment #82-17)

"Great concern about the transition time of 18 months that's listed for lodge unit or units when new units are instructed that the old units will remain in service for 18 months it doesn't seem reasonable that to allow -- It seems like a way to expand the amount of people that could be housed say, in the lodge. At least it isn't written in that there would be a limit on the number of people that, or number of rooms."
(Individual, Merced, CA, Comment #98-2)

Response: This concern has been clarified in the Final Revised Merced River Plan/SEIS. The language pertaining to an 18-month transition period as it relates to overnight accommodations has been changed. The National Park Service has committed to not using older facilities once newer ones are constructed and become operational.

Concern 38: The National Park Service should revise the entire Merced River Plan using User Capacity as a foundational element.

"Though the Federal Register Announcement focused on the two deficiencies, it recognized the "ENTIRE. . . CMP is INVALID" and referenced "Land management, user capacities, appropriate types and levels of recreation, and protection and enhancement of the Merced River's Outstandingly Remarkable Values" as integral to the total effort. However, when Yosemite announced the call for scoping they decidedly narrowed the focus claiming: "The Court's decision upheld the other elements of the plan, including boundaries for other segments of the river; classifications for all river segments; Outstandingly Remarkable Values; the River Protection Overlay; the Section 7 determination process, and the plan's management zoning program. As a result, these five elements are not being revisited in the SETS." Consequently, the document before us represents the Park's "spin" on the court order, making a mockery of the judicial system; it merely plugs in some interim numbers that have no environmental relevance while management charges forward with the Yosemite Valley Plan."
(Individual, Oakhurst, CA, Comment #55-2)

"User capacity including the all important types of uses (uses based on the natural and cultural values of Yosemite, versus resort/urban amenities and construction), are integral to a plan that protects the River's values, and cannot merely be slapped onto an already invalid plan -- unfortunately, that is just what NPS appears to be doing in the current release of the D. R. MRP."
(Individual, Comment #93-8)

"User Capacity: The D. R. MPR tries to address user capacity by layering it on top of the inadequate CMP. Adequately addressing user capacity must be accomplished in context of a CMP built on Outstandingly Remarkable Values, as an integral and integrated component. User capacity in this plan is not based on nor protective of Outstandingly Remarkable Values it is not adequate in any alternative."
(Conservation Organization, Yosemite, CA, Comment #111-82)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal segment based on the location of Outstandingly Remarkable Values. The Ninth Circuit Court of Appeals found that the plan was invalid due to these two deficiencies. Other elements of the Plan (e.g., the River Protection Overlay, Management Zoning, Outstandingly Remarkable Values, river classifications, and river boundaries outside of El Portal) had been challenged in an earlier phase of litigation before the U.S. District Court in Fresno. The District Court rejected challenges to those elements of the plan, and the District Court's findings in this regard were never appealed to the Ninth Circuit. Therefore, the National Park Service considers the remaining elements of the Merced River Plan to be appropriate tools that can be used to further the mandates of the Wild and Scenic Rivers Act. When coupled with the remaining plan elements, the revised User Capacity Program and the revised El Portal boundary work synergistically. Together, they form a comprehensive framework for managing the river. Because the newly revised elements of the Revised Merced River Plan/SEIS can and do function with pre-existing elements in a comprehensive manner, the remaining management elements as described in the existing Merced River Plan/FEIS are not being revisited in this plan.

Concern 41: The National Park Service should reduce overnight accommodations before restricting day users when bringing the total daily maximum down on peak visitation days.

"Since NPS seems to be proposing a major increase in overnight accommodations, the only way I could visual that NPS could bring the total daily maximum down on peak visitation days would be through a drastic curtailment of day users. This would be a reversal of previous NPS policy to accept the shift in user demand away from overnight and toward day use. Also, while offering greater profit opportunities for Delaware North, it would take business away from the gateway communities."
(Individual, San Francisco, CA, Comment #31-3)

Response: Overnight accommodations in the park in general, and in the Valley in particular, are typically reserved by the general public well in advance of their visit to the park (up to a year in advance in many cases). In addition, the number of overnight accommodations are far less in terms of the percentage of total visitors to the park on peak visitation days. Given this, and the unpredictability when peak visitation days may occur, it is unrealistic to reduce overnight accommodations on peak visitation days before placing restrictions on day users.

Concern 446: The National Park Service should recognize that the introduction of facility limits necessitates comments on site-specific implementation plans or projects, and therefore should be considered in scope.

"PROGRAMMATIC vs. IMPLEMENTATION PLAN. The document clearly states that the Revised River Plan is a programmatic plan that establishes management direction. On the other hand, implementation plans, such as the Yosemite Valley Plan, "direct specific projects as well as ongoing management activities or programs." It would appear that in order to stay within the scope of this planning effort, comments from the public would need to address the programmatic aspect of the Plan and not become distracted by specific projects or site specific analysis. Yet by introducing interim facility limits associated with specific projects, this document misleads the public. The tendency will be to focus more on individual projects (e.g., campgrounds, lodging, day visitor parking, etc.) rather than what is intended to be a resource- based analysis. And, consequently, will such confusion render numerous public comments useless because they may be considered outside the scope of this planning effort?"
(Individual, Oakhurst, CA, Comment #55-15)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts but it does not dictate any specific action. The court directed the National Park Service to revise the plan to address the El Portal boundary and user capacity. The court also stated that the National Park Service could adopt interim limits on use if the VERP program would not be fully operational immediately. The park has accepted and responded to comments regarding these interim limits.

Criteria for Selection of Planning Goals

Concern 25: The National Park Service should adopt an interim plan as described in the Madera County Supervisor's letter of June 27, 2000.

"The YSVB [Yosemite Sierra Visitors Bureau] also recommends adoption of the interim plan described in the Madera County Supervisor's letter of June 27, 2000 while re-tooling of the RMRP takes place."
(Individual, Oakhurst, CA, Comment #49-8)

Response: Because the "interim plan" as described in the Madera County Supervisor's letter of June 27, 2000 was not provided to the National Park Service during the public comment period for the Draft Revised Merced River Plan/SEIS, the National Park Service is unable to respond to this concern in its entirety.

Concern 43: The National Park Service should implement a legally sufficient User Capacity Program that more closely represents the definition of "user capacity" as described in the 1982 Wild and Scenic Rivers Guidelines rather than the Visitor Experience and Resource Protection framework.

"The 1982 [Wild and Scenic Rivers] guidelines define the concept as the quantity of recreation use which an area can sustain without adverse impact on the Outstandingly Remarkable Values and free-flowing character of the river area, without adverse impact on the quality of the recreation experience, and without adverse impact on public health and safety. Instead you've chosen to go with VERP-spin which claims user capacity is only about sustaining the desired resource and social conditions that complement the purpose of the park units and their management objectives. ". . . complement the purpose of the park units and their management objectives."
(Individual, Oakhurst, CA, Comment #28-2)

"The Ninth Circuit court order stated that the NPS is [not] precluded from using VERP to fulfill the user capacities requirement. . . ," as long as such limits "will not adversely impact the Merced Outstandingly Remarkable Values." Instead Park administrators chose to redefine user capacity as "the types and levels of visitor use that can be accommodated while sustaining the desired resource and social conditions that complement the purpose of the park units and their management objectives" (Page 11-17). Such terminology makes for warm and fuzzy language but blurs measurable objectivity and accountability."
(Individual, Oakhurst, CA, Comment #55-4)

"Astoundingly, User Capacity definitions in this D. R. CMP do not even use the operative 1982 NPS Fed Guidelines for user capacity for WSR def, instead use NPS management definitions. YVP plans to accommodate more visitors, yet no user capacity based on protection of Outstandingly Remarkable Values yet determined. That is pre-decisional."
(Conservation Organization, Yosemite, CA, Comment #111-83)

Response: Commenters refer to the 1982 National Wild and Scenic Rivers Guidelines, which define carrying capacity as "the quantity of recreation use which an area can sustain without adverse impact on the outstandingly remarkable values and free-flowing character of the river area, the quality of recreation experience, and public health and safety." Those guidelines go on to direct that "public use will be regulated and distributed where necessary to protect and enhance (by allowing natural recovery where resources have been damaged) the resource values of the river area. Public use may be controlled by limiting access to the river, by issuing permits, *or by other means available to the managing agency through its general statutory authorities.*"

Managers are thus guided to maintain certain conditions on the river's Outstandingly Remarkable Values and free-flowing character. The guidelines also direct certain conditions on the quality of the recreation experience, and to public health and safety. To achieve this, park managers must first determine existing and desired conditions of the Outstandingly Remarkable Values and the recreation experience.

In the National Park Service, conceptual/programmatic plans such as general management plans and Wild and Scenic river management plans do this in a logical, trackable, transparent sequence of thinking and decision making. Park or river legislation, legislative histories, park service legislation, and other laws and regulations dictate the purpose, significance, and outstandingly remarkable values of the park or river. Based upon the purpose, significance, and Outstandingly Remarkable Values, management prescriptions or desired conditions are created. They establish the basis for determining the types, levels, and locations of recreation activities to achieve the goals or conditions. This is done with full National Environmental Policy Act and 106 compliance, and with extensive consultation with the public. This transparent and deliberate process documents decision making that is more accountable and responsive to legal mandates than previous carrying capacity techniques that relied on an "expert" to intuitively determine a number of people who should visit an area based on professional judgment.

The National Park Service adopted this technique in its 2001 Management Policies, which define and describe visitor carrying capacity as "the type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions in the park. Managers will also identify ways to monitor for, and address, unacceptable impacts to park resources and visitor experiences.

The decision-making process must include the best-available science, and quality indicators and standards for resource conditions and visitor experiences. The level of analysis necessary to make decisions about carrying capacities is commensurate with the potential impacts or consequences of the decisions. The greater the potential for significant impacts or consequences to park resources and values (or the opportunities to enjoy them), the greater the level of study and analysis needed to support the decisions.

Concern 62: The Revised Merced River Plan should describe how impacts from buses will be mitigated in the final document.

"The plan does not adequately mitigate the impacts of buses during the hours when the greatest numbers of them arrive from 10 am to 12 pm and more broadly from 10 am until 2 pm." (Individual, Fremont, CA, Comment #51-11)

Response: Visitation to Yosemite by bus peaked in 1996 with approximately 18,000 buses carrying approximately 450,000 visitors. Since that time, both the number of buses and the number of visitors traveling into the park by bus have declined to approximately 9,500 buses carrying 275,000 visitors in 2004 (see figure IV-2 and supporting text in Chapter IV). In addition, Yosemite Valley visitors arriving by bus tend to be concentrated in developed areas of the park that provide adequate space for bus parking and have hardened surfaces for walking to view popular features such as Yosemite Falls, Bridalveil Fall, Tunnel View, and the Yosemite Lodge area. Visitors in organized tour groups typically do not have the time to explore undeveloped areas and typically do not stray far from the tour guides or buses. Alternative 2, as presented in the Final Revised Merced River Plan/SEIS, proposes an interim limit of 92 buses per day entering Yosemite Valley and 28 per day in Wawona. Though no limits on buses are proposed for Alternatives 3 and 4; the daily segment or management zone limits, coupled with the annual corridorwide visitation limits would provide an overall limit on the number of visitors within the river corridor, including those who travel in by bus.

Concern 217: The National Park Service should base its planning on natural resource-based management rather than on existing and planned facilities.

"Alternative 1 is misleading because you equate average existing visitation with the visitor capacity. These terms are not the same. By analogy, the occupancy rate (i.e., visitation) in a hotel, restaurant, train, boat, or airplane is not the same as the visitor capacity in these examples. The occupancy or visitation rate of the Merced WSR is not its user capacity."
(Individual, Fort Collins, CO, Comment #73-4)

"The numeric capacity decision should duly consider the necessary information that effects a visitor capacity decision (see previous discussion in #1[comments 73-1, 73-2, 73-3]), not simply based on existing use or existing and planned facilities."
(Individual, Fort Collins, CO, Comment #73-13)

"NPS needs to stop basing its planning on existing facilities and purposed facilities to be developed; instead, natural resources based management is what WSRA requires."
(Conservation Organization, Yosemite, CA, Comment #111-68)

Response: The 1980 *General Management Plan* did, indeed, base carrying capacity decisions on the numeric carrying capacity of facilities. The proposed approach to carrying capacity in Alternative 2, the environmentally preferable alternative, would amend that portion of the *General Management Plan* for the Merced River corridor and replace it with the VERP framework. Implementation of Yosemite's VERP program will be more responsive to fulfilling and supporting *General Management Plan* objectives and the protection and enhancement of the Outstandingly Remarkable Values of the Merced River.

Science/Resource-Based Decision-Making

Concern 133: The National Park Service should consider recommendations from the 2002 Federal Interagency Task Force Report on Visitor Capacity when making decisions about visitor capacity.

"The 2002 Federal Interagency Task Force Report on Visitor Capacity, co-sponsored by the NPS, provides a fuller list of considerations towards making a reasonable visitor capacity decision (pg. 16): Inputs to a Capacity Decision. Sound professional judgment relies on many informational inputs. Those particularly relevant to a visitor capacity decision might include: management objectives (including all legislative and policy guidance); desired future conditions and quality standards (resource, social, management); current and future recreation demand (who, where, what, when, how, why); current resources, conditions, uniqueness, capability, and trends; current management capability and suitability; current type, amount, and design of facilities and infrastructure; appropriateness (compatibility) of current or proposed recreation opportunities; regional supply of the same and similar recreational opportunities; foreseeable changes in recreation and nonrecreational uses; existing allocations to permittees and other land uses/users; significance of the visitation issues and concerns; potential for natural or cultural resource impairment; type and amount of best available science and information; level of uncertainty and risk surrounding consequences of decision; and the expected quality of the monitoring program."
(Individual, Fort Collins, CO, Comment #73-3)

Response: During the writing of the document, the planning team reviewed the Interagency Task Force Report on Visitor Capacity. The National Park Service believes that the alternatives proposed in this document are consistent with the majority of the recommendation in the report. However, the agency does not agree with all of the report's recommendations. The National Park Service representative on the Task Force noted those disagreements in comments submitted on the draft report. The National Park Service believes that the VERP process is consistent with the current state of knowledge and best practices in managing user capacity on public lands.

Concern 156: The "Addressing User Capacity" section of the Revised Merced River Plan should be revised to accurately reflect the diversity of opinions of successes of developed user capacity programs.

"The section on "Addressing User Capacity" has little basis in fact. Your discussion of user capacity on pages II-16 and 17 is not complete, narrow, and has little basis in fact of the situation on the federal estate. The reader is left with the impression in reading this section that the question of user capacity is dealt with by a special process or approach such as LAC, VERP, VIM, or ROS. As part of the Task Force effort there was an in-depth survey done of 95 field units from around the United States that had decided upon a numerical user capacity for their managed areas. Participants were asked what decision process or steps were used. Seventeen (17%) percent of the respondents indicated they had used VERP (3%), LAC (11%), or ROS (3%), and no respondent indicated VIM. Most respondents indicated that they were addressing user capacity as one decision among many within a NEPA-compliant planning process, which in my opinion is exactly what is required on you in the Merced Wild and Scenic River SEIS. Your discussion [on "Addressing User Capacity"] also gives the sense of agreement and consensus in addressing user capacity. Not true. In the Sept 2004 issue of Parks and Recreation, I wrote the following (pg 109):

First, in the early 1980s, the recreation science community rightly disclosed that a numerical visitor capacity was an administrative decision and not a scientific finding. In the absence of a scientifically determined visitor capacity, the recreation science community began to develop alternative monitoring frameworks purporting to address visitor capacity. Some 10 monitoring frameworks have been published (e.g., VERP, LAC, VAMP, VIM, QUALs) that, for all practical purposes, are the same.

Unfortunately, these monitoring frameworks have fostered a number of misunderstandings among managers and researchers. For example, (a) a numeric visitor capacity is no longer an important and fundamental tool for resource planning and management; (b) monitoring enables a manager to circumvent his responsibility of deciding upon a reasonable numeric visitor capacity; (c) monitoring allows us to dispatch a visitor capacity decision to a future time and another person; or (d) a numeric visitor capacity can be determined with enough monitoring and, thus, there is no need for a manager to make a decision now or later.

This titanic myth is at the core of the National Park Service problem in the Merced River case. These monitoring frameworks may be good monitoring frameworks, but they do not replace the need for proactive numeric visitor capacity decisions. Monitoring and visitor capacity are two separate tools and decision points, they are not an either/or option, and both are important to good resource planning and management.

You need a more complete and factual presentation in this Section of how user capacity is being addressed nationally and acknowledge that there continues to be dialogue about how best to proceed." (Individual, Fort Collins, CO, Comment #73-37)

Response: The user capacity issue is complex and continues to be intensely debated among academicians, scientists, and land managers. There are many methods for addressing user capacity on public lands—as well as many points of agreement and disagreement. The Final Revised Merced River Plan/SEIS has been revised to acknowledge that these areas of agreement and disagreement on user capacity management exist within the recreation management field. Additionally, the revised plan contains citations to various articles representing this debate.

Concern 157: The Revised Merced River Plan should be revised based on the best available science and information on visitor capacity, including the National Park Service sponsored "Visitor Capacity in the National Park System" September 2001.

"The inclusion of best available science and information needs expansion. Your literature review and the text of the SEIS appears that you have not considered all the best available science and information on visitor capacity. My concern is that institutions often entrap themselves into a phenomenon called "groupthink" and the quality of their decisions are lessened.

For example, the National Park Service commissioned a Social Science Research Review entitled Visitor Capacity in the National Park System that was published in Spring 2001 (Volume 2, Number 1). It was a two-year project and the paper was rigorously peer reviewed. There is also the 2002 Federal Interagency Task Force Report on Visitor Capacity sponsored by the NPS and participated in by many NPS professionals. A copy was personally mailed to you over 18 months ago. Based upon a lack of citation and reference, it appears that these recent NPS contributions were not duly considered in the SEIS.

While these and other publications are not hearty endorsements for VERP and may not support your pre-decisional stance, I think these would help to constructively challenge and clarify your thinking about user capacity, all for the purpose of making even better decisions and to fend against elements of groupthink."
(Individual, Fort Collins, CO, Comment #73-38)

Response: Creation and implementation of the VERP framework has included an exhaustive study of scholarly and scientific information, including the Federal Interagency Task Force Report on Visitor Capacity. While the report was sponsored in part by the National Park Service, and the National Park Service participants agree with many of the findings documented therein, the agency never adopted the report due to fundamental ongoing professional disagreements with key findings. This document does cite several of the elements within the above referenced publications that the National Park Service agrees with. Please refer to Chapter IX: Bibliography for more information on cited materials.

Concern 160: The Revised Merced River Plan should set baseline conditions for indicators reflecting river health with restored meadows and river banks, as opposed to current degraded conditions.

"Choose a more accurate baseline for river health. The Revised Merced River Plan necessarily chooses a baseline against which to measure changes in river health. But current river condition is not the best baseline, because the river is already ecologically stressed. A better baseline would include restored meadows and riverbanks, plus minimal intrusion by non-native species."
(Individual, Comment #81-5)

Response: Since the Merced River was designated a Wild and Scenic River by Congress in 1987, park managers in Yosemite have placed a strong emphasis on the restoration of meadows and those areas of the Merced River bank that experience heavy visitor use, particularly in Yosemite Valley. As examples, the park has undertaken several restoration efforts such as:

- Restoration of riverbank and Devil's Elbow
- Cook's Meadow Restoration
- Stoneman Meadow Restoration
- Sentinel Meadow Restoration
- Merced River Restoration at Eagle Creek
- Removal of the Happy Isles Gauging Station Bridge
- Removal of the Cascades Diversion Dam

Many recent and ongoing restoration efforts have been listed in Chapter 3, Alternatives as part of the discussion under Alternative 1—No Action. Ecological restoration efforts in the river corridor have served to improve the overall health and free-flowing condition of the river since its 1987 designation and are indicative of current baseline conditions. Although resource managers recognize that there is still work to be done in some areas, the indicators and standards developed under the park's VERP program provide a sound mechanism for ensuring the ongoing protection of the Merced River.

Concern 171: The Revised Merced River Plan is incorrect in its assumption that current use levels are protective of Outstandingly Remarkable Values.

"Page II-35 para 3 states "Current park policies and existing use levels are considered to be protective of the Outstandingly Remarkable Values." I believe this is a subjective assumption that could lead to irreparable long-term harm to Outstandingly Remarkable Values of the Merced Wild and Scenic River. It is an assumption that should be substantiated (or refuted) with data…how do we know current levels of use of the Merced River corridor with all of the associated accoutrements needed to support those visitors (e.g., utility lines, roads, structures, employee housing, school, day care center, etc.) are not harming aquatic invertebrates, or changing the hydrologic regimes of the Valley?
(Individual, Fresno, CA, Comment #82-8)

Response: The Final Revised Merced River Plan/SEIS has included graphs that depict park visitation from 1985 through 2004 (see table III-3). As shown by this figure, overall visitation levels today are nearly the same as those experienced in 1987, the year Congress designated the Merced River as Wild and Scenic. Since 1987, park managers have undertaken numerous initiatives within the river corridor with the objective of protecting and enhancing the river's Outstandingly Remarkable Values. The analysis in the Final revised Merced River Plan/SEIS indicates that the river's Outstandingly Remarkable Values are being protected and enhanced.

Concern 189: The National Park Service's objective should be an overall improvement of conditions, rather than maintaining the status quo.

"The National Park Service's objective should be an overall improvement of conditions in the Merced River corridor, not maintaining the status quo or allowing further degradation to occur."
(Individual, Fresno, CA, Comment #82-34)

"Be proactive about protection and restoration. If we wait for conditions to get bad enough to register, we may wait too long. Besides, meadows are already trampled. Beaches and river banks are already heavily impacted. In other words, we've already passed "baseline" for ecosystem health. We should think in terms of restoring vitality, not preserving an unhealthy status quo."
(Individual, Emerald City, CA, Comment #85-4)

Response: The National Park Service's objective is to strive for an overall improvement of conditions within the Merced River corridor. Park managers have undertaken several restoration efforts in recent years, particularly in adjacent meadows and along the river's banks. Examples of some of these projects include:

- Restoration of riverbank and Devil's Elbow
- Cook's Meadow Restoration
- Stoneman Meadow Restoration
- Sentinel Meadow Restoration
- Merced River Restoration at Eagle Creek
- Removal of the Happy Isles Gauging Station Bridge
- Removal of the Cascades Diversion Dam

Park managers have also developed a series of VERP standards and indicators that are designed to specifically focus on protecting and enhancing the overall environmental and ecological conditions in the river corridor. In addition, they have adopted a proactive approach for implementing management actions in the event VERP monitoring suggests conditions are approaching a specific standard (see figure II-3 and supporting text). This approach allows park managers to implement preventive measures before conditions reach levels where standards are being exceeded.

Concern 218: The National Park Service should develop adequate baseline data studies in order to develop user capacity.

"We filed numerous declarations from our experts which stated and laid out what surveys needed to be done, the kind of mapping for resources, and so on. We already presented NPS all this information which NPS is basically continuing to ignore. Baseline date, The Ninth Circuit said that NPS still has the duty to do develop adequate baseline date studies in order to develop user capacity. We herein incorporate those expert declarations."
(Conservation Organization, Yosemite, CA, Comment #111-69)

Response: The original Merced River Plan and this revision to the plan are based on large amounts of baseline data relevant to resource conditions within the park. Additionally, data was gathered during this plan revision, particularly in the El Portal area.

As part of the VERP program, still more baseline data are being collected and systematically analyzed and evaluated by park managers. As the VERP process continues to be implemented in the coming years, this data will be supplemented by additional information gathered during monitoring within the river corridor. This data will be used to continually fine-tune the VERP process.

Relationship to Other Planning Efforts

Concern 27: The Revised Merced River Plan should explain why lodging and campsite numbers have changed in comparison to the *Yosemite Valley Plan* and the *General Management Plan*.

"The NPS appears to be proposing a substantial increase in overnight accommodations of all kinds. Some of the proposed numbers are greater than present numbers, and most if them are substantially larger than called for in the 2000 Yosemite Valley Plan (YVP).Specifically, the YVP calls for 961 lodging units; the MRP calls for 1,262. The YVP calls for 500 campsites (presently 475); the MRP calls for 628. I could find no rationale for the larger numbers other than they are aiming for a total daily maximum of 18,241visitors, which is the number contained in the 1980 General Management Plan (GMP). If I have missed something I would appreciate being pointed to it, citing a specific page number reference."
(Individual, San Francisco, CA, Comment #31-2)

Response: The Final Revised Merced River Plan/SEIS has been revised to provide clarification between the numbers used for lodging and campsites in comparison to the General Management Plan and the Yosemite Valley Plan in the tables presented in Chapter III and Appendix C (Appendix D has been changed to Appendix C in the Final Revised Merced River Plan/SEIS). As presented in Alternative 2, interim facility limits for overnight lodging units are based on the number of existing units. As new units are constructed existing units will be eliminated from saleable inventory to ensure no net increase in the rooms available for occupancy, even temporarily.

The General Management Plan called for a reduction of 116 campsites from existing levels in 1980 which was 872 campsites, to the proposed level of 756 campsites in Yosemite Valley; most of them within the Merced River corridor. The Final Revised Merced River Plan/SEIS proposes 638 campsites for Yosemite Valley in Alternative 2, which is a further reduction from the General Management Plan proposed levels. However, the numeric approach to managing carrying capacity within the river corridor will be amended by this plan through the VERP program. Indicators and standards have been developed to monitor achievement of the desired resource and social conditions within the river corridor, and will continue to be refined over time. Adjustments to location, number, and infrastructure will be made when warranted. It is anticipated that relocation of certain campsites from sensitive areas will serve the resource goals of both the General Management Plan and the Merced Rive Plan, both of which provide guidance for the Yosemite Valley Plan. Therefore campsite relocation and expansion of the current inventory fulfills goals and works towards achieving desired conditions within the river corridor.

Concern 45: The National Park Service should develop a Revised Merced River Plan that takes precedence over previously determined *Yosemite Valley Plan* implementation projects.

"This River Plan serves the dictates of the predetermined Yosemite Valley Plan. The Management Zones continue to justify the build out plans, and more, of the YVP. On top of that, the Park Service continues to show a chart that purports to show the Yosemite Valley Plan is based on the River Plan. A valid finalized River Plan does not yet even exist, so it is obvious to anyone that the Yosemite Valley Plan is predetermining the zoning in the River Plan. Protection of the River's special values should be determining the River Plan; then and only then, should a plan, such as the YVP be put together. YVP projects should have been and should be based on whether or not they degrade River values. If they do degrade the River, then they should not take place."
(Individual, Comment #93-6)

"As long as the draft plan remains justification for Yosemite Valley protects, it cannot be a protective plan."
(Individual, Cupertino, CA, Comment #103-2)

"Your revised document does not alter the existing "zoning" mistakes that are being used to justify the development associated with the Yosemite Valley Plan. In fact this "revised" plan simply reinforces predetermined outcomes in the Yosemite Valley Plan. The degradation to natural resources, cultural resources, and visitor experience that will be caused by the Yosemite Valley Plan should have been stopped by the revised Merced River CMP not justified."
(County Agency, Groveland, CA, Comment #140-4)

Response: The El Portal boundary and user capacity management program elements contained in the Revised Merced River Plan/SEIS, combined with the elements of the existing 2000 Merced River Plan amend the park's *General Management Plan*, and take precedence over implementation plans such as the *Yosemite Valley Plan*. The Merced River Plan is a programmatic plan that guides management of the Merced Wild and Scenic River corridor. This issue is clearly presented in both text and graphics in Chapter I of the document. All future *Yosemite Valley Plan* projects will have to be reviewed to determine whether they comply with the revisions to this plan. Changes made to zoning in the El Portal area may result in revisions to the *Yosemite Valley Plan* in that area.

Concern 447: The Revised Merced River Plan should clarify the relationship between the capacity numbers used in the Revised Merced River Plan, the *General Management Plan*, and the *Yosemite Valley Plan*, and include a simple table in the document.

"The 1980 GMP claimed that within Yosemite Valley, the park would continue to "provide a variety of camping opportunities" while removing "facilities that are sources of impact on riparian areas" (GMP, page 43). To accomplish that goal, the GIVIP advocated removal of campground sites and other development closest to the Merced River--a total of 1 16 units. The plan would "retain and revegetate 684 drive-in campsites" out of a total 756 proposed campsites in Yosemite Valley (less than the 872 existing pre-1980). The Revised Merced River Plan wants us to believe it is working diligently to achieve the capacity goals outlined in the 1980 GMP. Examining that effort more closely: the interim capacity goals as outlined in Appendix D will result in 432 drive-in sites and another 194 group/walk-in/walk-to sites for a total of 626 (the Plan says 628 but there is discrepancy in the numbers). BUT a review of Appendix F 'Potential Cumulative Actions," page F-7 describes a project titled "Visitor Use and Floodplain Restoration Program" which discusses the ecological restoration of North Pines campground (86 sites) and the northwest end of Lower Pines Campground (16 sites) with an EA planned for release in 2005. The Yosemite Valley Plan is even more clear: "North Pines Campground, which was also affected by flooding... Would be removed to preserve and restore highly valued resource areas" and a "portion of Lower Pines Campground... Would not be reconstructed" (Final YVPIEIS, Volume 1A, page 2-68). Since interim capacity numbers include the sites at these two locations, we can only conclude that such sites will be temporary--a future loss of 102 existing drive-in sites. Meanwhile, Appendix D counts as part of the interim camping numbers the construction of 160 NEW sites (30 RV, plus 130 walk-in/walk-to/group)---sites outlined in the Yosemite Valley Plan and the Curry EA."
(Individual, Oakhurst, CA, Comment #55-17)

Response: The *General Management Plan* based visitor capacity on the capacity of facilities and infrastructure. Visitor capacity "goals" identified in the *General Management Plan* were based on facility levels well below the actual level of facilities in 1980. However, in the 1990s national scientific and scholarly research as well as National Park Service policy discussions resulted in the adoption a new methodology for determining visitor carrying capacity. This methodology—the VERP framework—is described in the 2001 National Park Service Management Polices and in new Park Planning Program Standards signed in August 2004. In order to meet the new policy standards, Yosemite National Park will amend the visitor capacity "goals" of the *General Management Plan* by translating the former carrying capacity approach to the more responsive VERP process through each new planning effort undertaken. Thus, the visitor capacity goals from the *General Management Plan* will not form the basis for carrying capacity decisions in Yosemite National Park as proposed in Alternative 2.

The National Park Service is not addressing how the numbers proposed in the user capacity alternatives compared to numbers in the *Yosemite Valley Plan*, because the *Yosemite Valley Plan* derives its guidance from and must tier off of the Merced River Plan, as revised in this document. Once the Revised Merced River Plan is complete, the National Park Service will evaluate the *Yosemite Valley Plan* to determine if it needs to be revised to comply with the Revised Merced River Plan and the *General Management Plan*, as amended by this Final Revised Merced River Plan/SEIS.

General Management Plan

Concern 93: The National Park Service should base a day use reservation system on the *General Management Plan* daily maximum of 18,241.

"I also believe that the NPS should adhere to the numbers prescribed in the GMP (18,241 for YV). That number can be the initial basis for a day use reservation system. Then, if future monitoring shows continuing degradation at this level, the number can be reduced [And, in the unlikely event that monitoring shows no problems, the number could be increased.]"
(Individual, San Francisco, CA, Comment #31-11)

"The 1980 General Management Plan established a day use visitor capacity of 18,241. This plan was developed and carefully researched but not funded or implemented. That number for day use visitors in the Valley at any one time is still applicable today and should be used as a baseline for day use visitation."
(Conservation Organization, Oakland, CA, Comment #75-2)

Response: The *General Management Plan* based visitor capacity on the capacity of facilities and infrastructure. Visitor capacity "goals" identified in the *General Management Plan* were based on facility levels well below the actual level of facilities in 1980. However, in the 1990s national scientific and scholarly research as well as National Park Service policy discussions resulted in the adoption a new methodology for determining visitor carrying capacity. This methodology—the VERP framework—is described in the 2001 National Park Service Management Polices and in new Park Planning Program Standards signed in August 2004. In order to meet the new policy standards, Yosemite National Park will amend the visitor capacity "goals" of the *General Management Plan* by translating the former carrying capacity approach to the more responsive VERP process through each new planning effort undertaken. As such, were a day use reservation system to be proposed as a management action; park mangers would evaluate the appropriate level of visitor use based on information gathered through the VERP program, and would not arbitrarily use the visitor capacity goals from the 1980 *General Management Plan.*

The Final Revised Merced River Plan/SEIS identified and evaluated a range of reasonable and feasible alternatives to address user capacity in Yosemite National Park based on the VERP framework. VERP is a process that considers capacity in a different way. Rather than simply counting an arbitrary number of people, implementation of a VERP program will allow park managers to monitor resource conditions and the visitor experience and make better decisions accordingly. Full implementation of the VERP process ultimately pinpoints the cause of impacts, then informs and guides future decisions relating to patterns of visitor use within a specific area of the river corridor. This ensures that the river's Outstandingly Remarkable Values are being protected and enhanced. If monitoring of indicators determined that management action was necessary in order to protect and enhance the river's Outstandingly Remarkable Values, a day use reservation system is one of many potential management actions that could be implemented (see table II-3). It should be noted, however, that an appropriate level of National Environmental Policy Act compliance and public involvement would be undertaken by the park prior to any form of a day use reservation system being implemented (see table II-4).

Concern 129: The Revised Merced River Plan should better explain how allowable future actions under the preferred alternative will limit unnatural sources of air pollution as prescribed in the *General Management Plan*.

"The 1980 General Management Plan "calls for the National Park Service to limit unnatural sources of air pollution to the greatest extent possible" (p. III-56). The DMRCMP fails to explain how this might be accomplished given that it would allow higher interim numbers of buses, lodgings and human impacts during the VERP."
(Individual, Fremont, CA, Comment #51-21)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended address these deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. The effects of the programmatic actions in this plan on air quality are addressed in the environmental consequences section. Decisions related to air quality for future actions will be evaluated in future project implementation plans. Future actions tiered to the Revised Merced River Plan/SEIS will also consider effects on air quality.

Concern 186: The Revised Merced River Plan should adopt *General Management Plan* visitation numbers.

"INCONSISTENCIES BETWEEN Interim FACILITY LIMITS & 1980 GMP CAPACITIES. The Revised River Plan continues to profess devotion to the 1980 General Management Plan: 'Park management would continue to use the visitor capacity goals from the General Management Plan for all facility planning purposes and would continue to manage the park with the intent of reaching those goals" (page 11-35). But as acknowledged in the Yosemite Valley Plan: "While the General Management Plan prescribed a maximum daily use. . . Level for Yosemite Valley, its analysis was facility- and vehicle-based, with no criteria or protection of resources or visitor experience" (Final YVPIEIS, Volume 1A, page 2-21). The Merced River Plan was supposed to institutionalize the protection of those natural resources and the visitor experience with a scientifically-based monitoring program complete with clearly defined and measurable standards and indicators. But while Park administrators claim allegiance to GMP capacity goals, a closer examination of those goals reveals stark inconsistencies."
(Individual, Oakhurst, CA, Comment #55-16)

"To protect Merced Wild and Scenic River Outstandingly Remarkable Values, the National Park Service should initially adopt the existing General Management Plan visitation numbers."
(Individual, Fresno, CA, Comment #82-30)

Response: The Yosemite National Park *General Management Plan* was adopted in 1980. In that era, visitor carrying capacity for national park plans was based on the capacity of facilities and infrastructure. Changes to existing facilities and infrastructure were recommended to fulfill and support management objectives. In this method, facility capacity defined the visitor carrying capacity. In the Yosemite 1980 *General Management Plan*, the total visitor capacity "goals" it established were well below the actual level of facilities. That is, the existing facility capacities were greater than the capacities deemed optimum by the plan. Thus the *General Management Plan* called, not only for a reduction in facility capacity, but relocation of many existing facilities out of Yosemite Valley. These goals to remove and relocate facilities have guided all park planning efforts subsequent to the *General Management Plan*, including this plan. In the 1990s, national scientific and scholarly research, and National Park Service policy discussions, resulted in the adoption a new methodology for determining visitor carrying capacity. This methodology—the VERP framework—is described in the 2001 National Park Service Management Polices and in new Park Planning Program Standards signed in August 2004.

While the land use management zones and general management direction of the 1980 *General Management Plan* still largely meet the 2004 Park Planning Program Standards, the 1980 approach to visitor carrying capacities does not. In order to meet the new policy standards, Yosemite National Park will amend that element of the *General Management Plan* by translating the former carrying capacity approach to the more responsive VERP process through each new planning effort undertaken. The visitor carrying capacity approach proposed herein for the Revised Merced River Plan/SEIS would therefore amend the subject corridor portion of the *General Management Plan* with regard to carrying capacity.

In the future, overall visitation could increase or decrease under Alternative 2 as compared with *General Management Plan* levels. The overall level of park visitation, including the types and levels of use, would be informed by the results of monitoring as a component of the VERP program, which is designed to ensure visitor levels do not degrade Outstandingly Remarkable Values. A discussion of how Alternatives 2, 3 and 4 relate to the 1980 *General Management Plan* is included at the end of the discussion of each alternative in Chapter III of the document.

Concern 448: The National Park Service should adhere to the *General Management Plan* intent to redirect development to the periphery of the park and to gateway communities, rather than placing gateway communities in competition with the concessioner.

"Scoping comments expressed concern with respect to how park plans would impact gateway communities. The 1980 GMP specified a much greater number of primitive low-cost tent cabins and cabins w/o bath than are currently planned. Consequently, gateway hoteliers built mid-priced and deluxe rooms that would complement, not compete with, Park accommodations. Current Park plans to increase the number of mid- to higher-priced rooms creates a situation where the gateway communities are in direct competition with the concessioner. Additionally, plans to force gateway overnighters (aka "day visitors") onto buses further places gateway businesses and clientele at a marked disadvantage. And the increasing focus of the concessioner toward event visitation (e.g., conferences, Chefs' Holidays, Vintner Holidays, 8 Bracebridge Dinners, Heritage Days, etc.) and resort-style entertainment further competes with gateway resort properties developed in response to the stated GMP intent "to redirect development to the periphery of the park and beyond.""
(Individual, Oakhurst, CA, Comment #55-25)

Response: The National Park Service still adheres to the *General Management Plan* goal of reducing and relocating facilities. The *General Management Plan* goals are adopted as planning objectives for the purpose and need for this plan. However, the Revised Merced River Plan/SEIS does not call out specific development projects or locations because it is programmatic in nature. It is a working manual for guiding decisions relating to land use and activities in the river corridor. Locations of future facilities will be addressed in implementation plans.

The National Park Service is committed to continuing ongoing dialogue with gateway communities to better address their needs during planning processes. Future development projects will undergo an environmental review process to ensure compliance with the National Environmental Policy Act. This process will initiate public involvement and ensure that gateway community concerns are taken into consideration. In addition, this process will assess local and regional socioeconomic impacts of proposed projects.

Yosemite Valley Plan

Concern 59: The National Park Service should halt certain *Yosemite Valley Plan* implementation projects because of potential adverse effects on resources.

"This [resource protection over visitor experience] is clearly not the case with the planned realignment of the NSD [Northside Drive]. The NSD realignment could be terminated without interfering with other components of the Lodge Redevelopment Project that otherwise might move forward if this highly controversial element is removed."
(Individual, El Dorado Hills, CA, Comment #27-14)

"It claims follow-on plans will be reviewed and revised if necessary that'll be pretty tough when trees have already been logged, facilities have already been constructed, roads have already been realigned, traffic circulation has been reconfigured, and visitation patterns have been altered. After all, you figure you've fulfilled your requirement as soon as this ROD is signed."
(Individual, Oakhurst, CA, Comment #28-5)

"YVP projects should have been and should be based on whether or not they degrade River values. If they do degrade the River, then they should not take place."
(Individual, Seattle, WA, Comment #76-2)

Response: The National Park Service has stopped all activities on *Yosemite Valley Plan* projects that have been enjoined by court order. However, the park is continuing to move forward with implementation of other *Yosemite Valley Plan* -related projects that have been reviewed by the Court and allowed to proceed.

Concern 63: The Revised Merced River Plan should set interim use limits at *Yosemite Valley Plan* numbers.

"[I]n its [the National Park Service's] Preferred Alternative, Alternative No. 2, is an additional 5 years of study under a process identified as Visitor Experience and Resource Management, VERP, before the day use [limits] are established, except there are some interim limits. It is difficult to pin down just what these interim limits are, but they appear to be a great deal more than the Yosemite Valley planning calls for, roughly 30 percent more."
(Individual, Ahwahnee, CA, Comment #41-3)

"The plan does not choose to put in place some interim limits that could have been based on, for example, the 2000 Yosemite Valley Plan (YVP), or some other reasonably construed limits to be used during the VERP. Instead, it chooses significantly higher limits, apparently based upon the lowest numbers of visitors, buses, and other impacts during the period ensuing from 1998 until 2004 rather than taking into account higher numbers from earlier years, which would have been a more realistic approach. Higher interim facility limits are not needed merely to accommodate the concessionaire or other interests at the expense of not protecting the resource adequately. The misleading jargon about "interim [facility] limits" of 1,262 lodging units cited on p. D-4, Table D-2: Alternative 2: VERP Program with Interim Facility Limits, and in Footnote d, appears to be an intention to increase substantially the number of units existing presently."
(Individual, Fremont, CA, Comment #51-10)

Response: The Final Revised Merced River Plan/SEIS does not set interim use limits at *Yosemite Valley Plan* numbers because as shown on figure I-3 and discussed in Chapter I of the document, this Revised Merced River Plan/SEIS is a programmatic level plan. The *Yosemite Valley Plan* (along with the individual projects it proposes) is an example of an implementation plan. By definition, the *Yosemite Valley Plan* derives its guidance from and must be consistent with the requirements and conditions presented in the Revised Merced River Plan/SEIS. In other words, the *Yosemite Valley Plan* must answer to the Merced River Plan, not vice versa.

Concern 68: The National Park should cap overnight use numbers at Yosemite Valley Plan levels, but do so with existing facilities.

"The fact that the Yosemite Valley Plan (YVP) called for significant reductions in most overnight accommodations (with a slight increase at the Lodge and at Camp Four) was a positive thing. Since the NPS is now proposing not only to abandon the YVP figures, but to increase overnight use even above present levels, I want to restate my SUPPORT OF THE OVERNIGHT USE FIGURES CONTAINED IN THE YVP. (however, I do NOT support the urban redevelopment projects; the numbers can be achieved with existing facilities.)"
(Individual, San Francisco, CA, Comment #31-4)

Response: Interim facility limits as proposed in Alternative 2 represent existing capacities for overnight accommodations for Yosemite Valley and Wawona. These are only interim limits. Long term overnight lodging levels will be decided in implementation level plans, which will be tiered to the Final Merced River Plan/SEIS.

Concern 91: The National Park Service should consolidate parking at the Village and limit spaces to 550 as per the Yosemite Valley Plan.

"Day use parking in the East Valley would stay the same as at present at 1,510 spaces, with current additional parking in the West and Mid-Valley areas to remain The YVP called for ALL Valley parking to be consolidated at the Village at 550 spaces."
(Individual, San Francisco, CA, Comment #31-7)

Response: Interim facility limits as proposed in Alternative 2 represent existing capacities for day visitation parking in Yosemite Valley. These are only interim limits. Long term parking space numbers will be decided in implementation level plans, which will be tiered to the Final Merced River Plan/SEIS.

Concern 321: The Revised Merced River Plan should not have a comprehensive visitor limitation or resource protection for Yosemite Valley because the river boundary is smaller than the lands with visitor facilities and natural resource concerns (these issues would better fit under the *Yosemite Valley Plan*).

"Finally, it also seems clear that a comprehensive visitor limitation or resource protection plan for Yosemite Valley is really misplaced in the Merced River plan. A river plan, by its very nature, is focused on the adopted river corridor—which is smaller (by statute) than the lands with visitor facilities and many natural resources of concern in Yosemite Valley. ... [T] Wild & Scenic Rivers Act authorizes river managers (particularly National Park managers) to achieve river planning objectives in coordinated plans prepared under other statutory authorities."
(Conservation Organization, Sacramento, CA, Comment #116-13)

"The principal planning efforts for addressing National Park visitor issues better fit plans also prepared under the authority of the organic act of the National Park Service such as the Yosemite Valley plan. the Wild & Scenic Rivers Act authorizes river managers (particularly National Park managers) to achieve river planning objectives in coordinated plans prepared under other statutory authorities."
(Conservation Organization, Sacramento, CA, Comment #116-14)

Response: Although the river corridor boundary adopted in the 2000 Merced River Plan for Yosemite Valley segment does not include the extent of the Valley floor, nor precisely match the developed area boundaries identified in the *General Management Plan*, it is not practical to manage visitor levels strictly within the river segments, separately from the larger developed areas. This is because the location of visitor and employee facilities and the dispersed nature of recreational activity within these developed areas result in continual movement of visitors and employees into and out of the river corridor throughout the day. The user capacity method for Alternative 2 as presented in the Final Revised Merced River Plan/SEIS is based on existing facilities which includes areas outside the river corridor boundary. Similarly, the user capacity methods proposed for Alternatives 3 and 4 are based existing facilities, though the levels of use are varied.

Concern 373: The Revised Merced River Plan should justify why there is an increase in the number of overnight accommodations beyond what is prescribed in the *Yosemite Valley Plan*.

"OVERNIGHT ACCOMMODATION INCREASES/CALL FOR LOWER NUMBERS: The Valley Plan called for 961 overnight lodging units. Alternative 2 calls for 1,262. The obscure "footnote d" (above) calls for several hundred more than that. The Valley Plan called for 500 campsites. Alternative 2 calls for 628.

We find no explanation or justification for this continual upward creep in overnight accommodations. Since the Merced River Plan is foundational to the Valley Plan, these higher numbers in the DRMRP constitute a huge defacto amendment of the Valley Plan...At the very least, the numbers which appear in the most recently published plan should have been used as targets for the "interim facility limit" preferred Alternative 2. That is 961 for overnight lodging, and 500 for campsites."
(Conservation Organization, Fresno, CA, Comment #113-18)

Response: The Final Revised Merced River Plan/SEIS proposes interim limits on overnight facilities in Yosemite Valley and Wawona that are based on existing capacities for those overnight accommodations. The interim limits would not be eliminated at the end of 5 years, unless park managers were confident that the VERP program was providing sound guidance on appropriate types and levels of visitor use and adequate protection of the Outstandingly Remarkable Values within the river corridor. If changes proposed at this time would result in substantially different environmental consequences than were identified in this document, an appropriate level of National Environmental Policy Act compliance would be completed. Because the Yosemite Valley Plan is an implementation plan that is tiered off the Merced River Plan, all actions will be reevaluated for consistency with the two elements of the Final Revised Merced River Plan/SEIS; the proposed user capacity program and El Portal boundary, following the signing of the Record of Decision.

The General Management Plan called for a reduction of 116 campsites from existing levels in 1980 which was 872 campsites, to the proposed level of 756 campsites in Yosemite Valley; most of them within the Merced River corridor. The Final Revised Merced River Plan/SEIS proposes 638 campsites for Yosemite Valley in Alternative 2, which is a further reduction from the General Management Plan proposed levels. However, the numeric approach to managing carrying capacity within the river corridor will be amended by this plan through the VERP program. Indicators and standards have developed to monitor achievement of the desired resource and social conditions within the river corridor, and will continue to be refined over time. Adjustments to location, number, and infrastructure will be made when warranted. It is anticipated that relocation of certain campsites from sensitive areas will serve the resource goals of both the General Management Plan and the Merced Rive Plan, both of which provide guidance for the Yosemite Valley Plan. Therefore campsite relocation and expansion of the current inventory fulfills goals and works towards achieving desired conditions within the river corridor.

Concern 378: The National Park Service should recognize the discontinuity of administrations over the development and implementation of the *Yosemite Valley Plan*.

"The valley plan was developed under one national administration and is going forward during another. There has been discontinuity both of superintendents in Yosemite, as well as national administrations. But the valley plan survives. One wonders why."
(Individual, Mariposa, CA, Comment #99-3)

Response: The Revised Merced River Plan/SEIS is a programmatic plan that does not prescribe specific actions, such as those called for in the *Yosemite Valley Plan*. Rather, it sets the framework for guiding future management decisions. Each administration follows the management direction established in the park's *General Management Plan*. Since 1980, the National Park Service has worked to implement the goals of the *General Management Plan* and will continue working towards these into the future. Implementation and refinement of these goals is expected to span numerous park administrations.

Concern 438: The National Park Service should withdraw the *Yosemite Valley Plan* and re-write it after a valid river plan is in place.

"No where does the NPS state the Yosemite Valley plan needs to be withdrawn or redone."
(Individual, Cupertino, CA, Comment #103-3)

Response: The *Yosemite Valley Plan* was developed and adopted in accordance with the Merced River Plan. Upon completion of the Revised Merced River Plan/SEIS, the National Park Service will review actions approved in the *Yosemite Valley Plan* to determine whether any revisions, such as the boundary and zoning decisions for the El Portal segment, would result in any changes to the *Yosemite Valley Plan*. Such changes could be subject to further National Environmental Policy Act analysis and possible public review. Upon completion of this Revised Merced River Plan/SEIS, future projects called for in the *Yosemite Valley Plan* will be reviewed to determine whether they are consistent with the Revised Merced River Plan/SEIS.

Implementation Plans and Projects

Concern 65: The National Park Service should establish a moratorium on all park projects in the Merced River corridor until a valid river plan is in place.

"And since the park is still lacking a valid and protective river plan, I strongly urge you to issue an immediate moratorium on all park projects within the river corridor. This is the only logical approach to park planning considering the fact that all Yosemite plans must have a foundation of a valid Merced Wild and Scenic River Comprehensive Management Plan."
(Individual, El Portal, CA, Comment #50-2)

"Any development in Yosemite Valley that increases the number of overnight or day visitors above current levels should be put on hold until the VERP process is fully operational and the NPS knows that the levels of use they are prescribing are not going to result in unacceptable impacts to Outstandingly Remarkable Values.

Any increase over present levels of use undermines the credibility of the entire VERP program. Suppose that five years from now the VERP program revealed that present levels of use violated VERP standards and threatened the integrity of Outstandingly Remarkable Values. Would the NPS then remove the new facilities or campsites that are already in place? How can we assume that Outstandingly Remarkable Values will not be harmed by an increase in camping before we have any data to support such a claim?"
(Individual, Fresno, CA, Comment #82-21)

"I respectfully ask the National Park Service to immediately halt all park planning and projects within, or dependent upon, the river corridor and/or the Outstandingly Remarkable Values which the court has not specifically permitted… Establishing any new facilities in Yosemite Valley or El Portal before it is known what the park needs to do in response to user capacity decisions and whether or where facilities should be located prejudices the entire Merced River comprehensive management planning process."
(Individual, El Portal, CA, Comment #109-1)

Response: Prior to undertaking and projects within or adjacent to the Merced River corridor, the National Park Service will evaluate the project to determine whether it complies with the elements of the Merced River Plan, as revised through this plan. This determination will include an assessment of whether the project will protect and enhance the Outstandingly Remarkable Values of the Merced River. For projects that have already undergone environmental review and public comment (e.g., the Lodge Area Redevelopment Project), the National Park Service will make the results of this re-evaluation publicly available. For projects that have not yet undergone environmental review, the National Park Service will include this evaluation as a part of the National Environmental Policy Act planning process for such projects.

The Merced River Plan has been developed using relevant and available data from many natural, cultural, social and other studies, which serve as baseline information. These studies are referenced in the plan, can be found in the bibliography, and are available upon request. The National Park Service information to determine if previously approved or future actions will or will not affect the Merced River's Outstandingly Remarkable Values. With this in mind it is important to note that the foundation of all action alternatives in the Revised Merced River Plan/SEIS, including the preferred alternative, *is* the protection and enhancement of the Merced River's Outstandingly Remarkable Values. Therefore, all future management actions, as well as actions approved in previous plans, will be guided by this principal regardless of when they are implemented.

It is true that the National Park Service has begun collecting additional baseline data and is conducting resource monitoring associated with Yosemite's VERP program. This information will supplement the existing body data and information.

Concern 94: The National Park Service should reassess current projects based on information gathered as part of the Visitor Experience and Resource Protection implementation process.

"Further, there appears to be no significant discussion of the multi-million dollar construction projects at the Lodge and Curry that were halted by the Ninth Circuit Court directives. References to the projects included under reasonably foreseeable future actions seems to imply the projects will proceed as soon as the final document is completed, well ahead of the 5- year resource assessment period. If constructed, will new and upgraded lodging units and road projects be torn down and removed if after 5 years, resource assessment indicators determine use levels are too high? Such an action would seem highly unlikely."
(Individual, El Dorado Hills, CA, Comment #27-11)

"Why is there no discussion of the need to hold up on the highly controversial north side drive (NSD) and section D [El Portal Road Improvement] road alignments until a full evaluation of their impacts are made during this five-year resource assessment period? It is imperative that a full re-evaluation of the NSD realignment proposal at Yosemite Lodge be made, as this highly controversial issue is crucial in implementing any VERP process. ...The NSD [Northside Drive] and section D road [El Portal Road Improvements] alignments are by far the most damaging components of the proposed projects."
(Individual, El Dorado Hills, CA, Comment #27-12)

"One of the most significant benefits of the Ninth Circuit Court decision was that it held up these enormous construction projects until a full review of their impacts and need are completed. At the very least the draft document should present a rationale for why they appear to be going forward on an essentially irreversible course prior to the completion of the 5-year resource assessment period."
(Individual, El Dorado Hills, CA, Comment #27-16)

Response: Prior to undertaking and projects within or adjacent to the Merced River corridor, the National Park Service will evaluate the project to determine whether it complies with the elements of the Merced River Plan, as revised through this plan. This determination will include an assessment of whether the project will protect and enhance the Outstandingly Remarkable

Values of the Merced River. For projects that have already undergone environmental review and public comment (e.g., the Lodge Area Redevelopment Project), the National Park Service will make the results of this re-evaluation publicly available. For projects that have not yet undergone environmental review, the National Park Service will include this evaluation as a part of the National Environmental Policy Act planning process for such projects.

The Merced River Plan has been developed using relevant and available data from many natural, cultural, social and other studies, which serve as baseline information. These studies are referenced in the plan, can be found in the bibliography, and are available upon request. The National Park Service information to determine if previously approved or future actions will or will not affect the Merced River's Outstandingly Remarkable Values. With this in mind it is important to note that the foundation of all action alternatives in the Revised Merced River Plan/SEIS, including the preferred alternative, *is* the protection and enhancement of the Merced River's Outstandingly Remarkable Values. Therefore, all future management actions, as well as actions approved in previous plans, will be guided by this principal regardless of when they are implemented.

It is true that the National Park Service has begun collecting additional baseline data and is conducting resource monitoring associated with Yosemite's VERP program. This information will supplement the existing body data and information.

Concern 130: The National Park Service should postpone Northside Drive and the El Portal Section D Road Improvement projects until full environmental disclosure of their impacts are determined.

"At the very least if there is going to be any meaningful outcome in this effort to protect the Merced River's ORV'S, NSD [Northside Drive] and section D [El Portal Road Improvements Project] must be put on hold until further public review and a full disclosure of their environmental impacts are determined."
(Individual, El Dorado Hills, CA, Comment #27-19)

Response: This programmatic plan does not authorize specific projects. The Northside Drive relocation is part of the Yosemite Lodge Area Redevelopment project for which an Environmental Assessment was completed. The document discloses the potential impacts on the environment from these projects, and it was found that the project would not significantly affect the quality of the human environment. This document is available to the public. When the Revised Merced River Plan/SEIS is complete, the park will review plans such as the Yosemite Lodge Area Redevelopment Project Plan to determine whether they comply with the revisions to the Merced River Plan. If park managers decides to pursue the El Portal Segment D Road Improvement project, it will undergo environmental review and public involvement in accordance with National Environmental Policy Act regulations, and will have to comply with the requirements of the Merced River Plan, as revised by this document.

Concern 247: The National Park Service should keep administrative construction projects away from the Merced River proper in El Portal to avoid degradation to biodiversity there.

"It is vital to keep administrative construction projects at El Portal away from the Merced River proper."
(Individual, Comment #70-2)

"In the El Portal area of the Merced River, the river offers great biological diversity. Causing any degradation in this diversity is moving in the wrong direction at attempts to maintain a Wild and Scenic River."
(Individual, Comment #70-3)

Response: The zoning proposed in Alternative 2—the National Park Service's preferred alternative—is protective of river values in El Portal. The Revised Merced River Plan/SEIS, however, does not make decisions on specific development or redevelopment projects in El Portal. Future construction activities in El Portal will have to be consistent with the river boundary limitations and related management zone prescriptions as presented in the Record of Decision for this planning effort. To this end, an El Portal Concept Plan, will be developed and undergo the appropriate level of environmental review. The El Portal Concept Plan will be made available for public review and comment.

Concern 260: The National Park Service should inform the public on the past eight years of construction associated with the Camp 6 project.

"What is the history in the last eight year of expansion of the parking area? We try to follow, but, realizing that the project has progressed in various phases despite our objection, we would like to be brought up to date."
(Conservation Organization, Yosemite, CA, Comment #111-30)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct these deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Based on the above, this public concern is not within the scope of this document. However, proposed actions associated with Camp 6 will be addressed in future implementation plans for that area.

Concern 404: The National Park Service should disclose why flood recovery dollars were used for non-flood recovery projects in the Merced River corridor.

"It is going on eight years since the park started using '97 flood money to transition Yosemite into a commercialized mass transit elitist park. The Hodapp Report supported by then superintendent Griffin's testimony clearly stated that 120 million dollars of the flood recovery money was for non flood recovery projects. Money made available with good intentions, but used to finance permanent destruction, including the aggressive widening and realignment of El Portal road."
(Individual, Oakhurst, CA, Comment #101-1)

Response: The National Park Service provides quarterly reports to Congress that describe and summarize Flood Recovery appropriation spending in response to a request in Senate Report 105-16 accompanying the Emergency Supplemental Appropriations Act. These quarterly reports provide progress information on recovery from Yosemite's 1997 flood that includes: (a) work performed in the previous quarter; (b) work expected to be performed in the coming quarter; (c) costs and obligations associated with such work; (d) the costs of such work as compared to original estimates; and (e) other information relevant to the ongoing rehabilitation program. The reports contain information that is cumulative for the period January 1, 1997 through the current quarter, and quarterly reports will continue to be submitted until completion of all flood recovery projects. Quarterly reports are filed and available to the public in the Yosemite Research Library in Yosemite Valley.

Lower Yosemite Fall Project

Concern 66: The National Park Service should prioritize funding of interpretation and trails maintenance staff over large scale construction projects and funding the VERP program.

"Just in case you haven't yet seen it for yourself, the Lower Fall area has been logged and freshly paved—thanks mostly to 11 million dollars from urban and well-heeled Yosemitephiles (a.k.a. The Yosemite Fund) AND additional millions from an NPS that continues to cut back on valuable interpretive staff and resource protection needed in the park."
(Individual, El Portal, CA, Comment #57-4)

"More funding for interpretation and less for concession enhancement might be one answer. Information centers at the entrance gates would greatly help in informing the visitors about Yosemite."
(Conservation Organization, Oakland, CA, Comment #75-11)

"And if we had more money, should it be going to the staffing for such a program, or would the river actually get more protection if it went to interpretation (educating the public) and trail maintenance (to keep people to designated trails)? ...I simply see that our little monies could be better spent elsewhere and, therefore, we need a plan that is more simple and basic to carry out."
(Individual, El Portal, CA, Comment #120-5)

Response: The National Park Service is mandated through the Wild and Scenic Rivers Act to address user capacity within the Merced River corridor in order to protect and enhance the very river values for which the Merced River was designated as Wild and Scenic. Because the VERP program is the park's preferred method to address user capacity and use related impacts to the Outstandingly Remarkable Values, the National Park Service has placed a priority on securing funding for VERP implementation into the future. However, the VERP program as described in this document does not reduce the park's obligation to maintain funding for other crucial program areas such as interpretation and trails maintenance. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions, such as specification on funding priorities.

Concern 390: The National Park Service should recognize the objections to placing picnic tables in the Lower Yosemite Fall area and the associated impacts they attract.

"The lower Yosemite falls project, very disturbing to me. I don't know why they want a picnic tables down there... It's also an area where I see a lot of children climbing rocks. Parents stand there watching them climb rocks. I think you're waiting for an accident to occur. They go up on top of the rocks and they eat and leave food and garbage up on top. And the lower Yosemite Fall is not a place for people to congregate, it's supposed to be a place where you walk and pass through. You pass on, because it is a sensitive area. So I object very much to picnic tables being put there."
(Individual, Fresno, CA, Comment #97-5)

Response: As a programmatic plan, this comment is beyond the scope of the Revised Merced River Plan/SEIS. However, the National Park Service is committed to providing for both resource protection of the sensitive area at Lower Yosemite Falls, and to allowing appropriate types and levels of visitor enjoyment of the area. The National Park Service seeks site design which is able to accommodate access and minimize impact. The site hardening and trail improvements in that area will likely minimize impacts in the long run, as visitor use is limited to specific areas. This can allow other previously-impacted areas to be return to natural conditions. In addition, the installation of picnic tables should encourage visitors to use them, rather than to use a place off-trail, potentially damaging more resources and perhaps leave more garbage behind.

Yosemite Lodge Area Redevelopment Project

Concern 308: The National Park Service should evaluate the impacts of the Yosemite Lodge Area Redevelopment Project on scenic views of the river from the Yosemite Lodge area.

"One of the Outstandingly Remarkable Values of the Yosemite Lodge area is view toward the river and beyond with only the current narrow paved pathway some distance from the river."
(Individual, Merced, CA, Comment #117-6)

Response: In accordance with the National Environmental Policy Act, the National Park Service completed an Environmental Assessment of the Yosemite Lodge Area Redevelopment Project in 2004. Impacts to wildlife, river resources, and scenic values were assessed in this document, which is available for public review.

Concern 327: The National Park Service should consider the impacts of the Yosemite Lodge Area Redevelopment Project on river resources and wildlife.

"The area (an ecosystem within itself) across from Yosemite Lodge is a disaster! So much has been cut away and it's too close to the river. I cringed every time I see what's been done. The western tanagers, black headed grosbeaks, western wood pee wees and robins, etc. etc. etc. need this area more than people do."
(Individual, Fresno, CA, Comment #128-6)

Response: In accordance with the National Environmental Policy Act, the National Park Service completed an Environmental Assessment of the Yosemite Lodge Area Redevelopment Project in 2003 and a Finding of no Significant Impact (FONSI) was issued in 2004. Impacts to wildlife, river resources, and scenic values were assessed in this document, which is available for public review.

Concern 379: The National Park Service should recognize how previously considered components of the Yosemite Lodge Area Redevelopment Project (calling for expansion of lodging facilities and employee housing) influenced the decision to realign Northside Drive.

"NORTHSIDE DRIVE RELOCATION AT YOSEMITE LODGE: The issue of whether to relocate Northside Drive to the south side of Yosemite Lodge is symptomatic of larger problems with planning in Yosemite. The proposed relocation has assumed a life of its own and moves on inexorably, seemingly exempt from any rational decision-making process. The idea first appeared, to our knowledge, back when it was being proposed to greatly expand the Yosemite Lodge facilities. At that time maps showed new lodging units and employee housing on and north of the existing alignment of Northside Drive. It was obvious that, if this expansion were to be accommodated, the road would have to [be] relocated to the south. The proposed Lodge expansion was dropped from subsequent Yosemite plans, but the relocation of the road still was shown in the new plans. The Valley Plan showed it as being a logical extension of a new road bridge over Yosemite Creek. That new crossing itself had been part of abandoning the existing Northside Drive alignment. But even though the new bridge crossing subsequently was abandoned, maps still showed the road going around the south side of Yosemite Lodge. Statements have been made by NPS staff that the road is needed south of the Lodge in order to provide a barrier, discouraging people from gravitating toward the river. It was acknowledged that there is not currently a problem; people are not presently degrading that portion of the river. (An argument not made on the record, but nevertheless hovering in the background, is that the realignment, if constructed, would facilitate resurrection of the massive expansion plans for Yosemite Lodge.)"
(Conservation Organization, Fresno, CA, Comment #113-24)

Response: As a programmatic plan, this comment is beyond the scope of the Revised Merced River Plan/SEIS. In accordance with the National Environmental Policy Act, the National Park Service completed an Environmental Assessment of the Yosemite Lodge Area Redevelopment Project in 2004. This document outlines the potential impacts to resources and other values in the area and can be found on the park's web site (*www.nps.gov/yose/planning*).

Applicable Laws and Regulations

Concern 67: The National Park Service should consider Wild and Scenic Rivers Act precedence over the 1958 congressional mandate setting aside the El Portal Administrative Site.

"Though El Portal was set aside in 1958 as an Administrative Site for Yosemite National Park, the Merced Wild and Scenic Rivers Act of 1987 now takes precedent over what the park may do with the El Portal section of the Merced River corridor. It needs to be emphasized to all El Portal residents that the Wild and Scenic Rivers Act calls for protection and enhancement of the Merced River values (a.k.a. Outstandingly Remarkable Values) —this fact makes all the difference in the planning efforts for El Portal (as well as for the entire Yosemite National Park)."
(Individual, El Portal, CA, Comment #48-1)

"In addition, in 1987, based on the hard work of many in the El Portal community and elsewhere, the Merced was declared a Wild and Scenic River under the federal Wild and Scenic Rivers Act. That changed the status of the El Portal Administrative District. Now the values of the Merced River in this sector of public land and segment of the Merced WSR must be protected. These values are not allowed to be degraded, they are mandated to be protected and enhanced."
(Conservation Organization, Yosemite, CA, Comment #111-99)

"All the talk about the El Portal DCP (Development Concept Plan) is premature to say the least, since there is not a protective river plan in place. That talk and planning by NPS and Mariposa County is being done while ignoring that the Wild and Scenic designation of the Merced River in El Portal now takes precedence."
(Conservation Organization, Yosemite, CA, Comment #111-101)

Response: In 1958, Congress authorized the National Park Service to establish an administrative site in El Portal to allow for the relocation of park operations and administration facilities outside Yosemite National Park (72 Stat. 1772). This act specified that the El Portal Administrative Site was not subject to the same laws and regulations governing Yosemite National Park. The purpose for creating the El Portal Administrative Site was to "enable the Secretary of the Interior to preserve the extraordinary natural qualities of Yosemite National Park, notwithstanding its increasing use by the public," by allowing the National Park Service to move operations and administrative facilities outside the boundaries of the park.

The *General Management Plan* provided guidance to the National Park Service to relocate operations and administrative facilities out of Yosemite Valley to the El Portal Administrative Site. Park administrative facilities may be relocated to the El Portal area provided that such actions are consistent with the requirements of the Wild and Scenic Rivers Act and the elements of the Merced River Plan, as amended. Namely, any future activities or development in El Portal must be done in such a way as to protect and enhance the Outstandingly Remarkable Values of the Merced River.

Applicable Laws, Executive Orders, Policies, Guidelines

Concern 131: The Revised Merced River Plan's user capacity alternatives should be revised in accordance with Wild & Scenic Rivers Act, National Park Service management policies and professional judgment.

"The alternatives are not valid. A. The basis for the user capacities specified in the four management alternatives in the SEIS are inconsistent and contradict the (a) NPS definition of user capacity in the SEIS Glossary, (b) the national NPS Management Guidelines also in the Appendix, (c) the 1982 Federal Interagency Guidelines for WSRs, and (d) 2002 Federal Interagency Task Force Report on Visitor Capacity. More specifically, basing a user capacity on average existing visitor use (alt. 1), existing facility limits (alt. 2 and 4), or zone or segment quotas "regardless of resource and visitor experience conditions" (alt. 3 and 4) is not conceptually sufficient and is contradictory to the Wild and Scenic Rivers Act, prevailing NPS policy, and professional thought."
(Individual, Fort Collins, CO, Comment #73-1)

Response: The action alternatives identified in this Revised Merced River Plan/SEIS have been developed to satisfy the 2004 Court Order requiring the National Park Service to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. These alternatives identified and evaluated in this document have been developed as a means to achieve this directive, compliant with the requirements of Wild and Scenic Rivers Act, and relevant National Park Service management policies and procedures.

Concern 132: The Revised Merced River Plan's definition of user capacity should be redefined as per the National Park Service management policies and the 1982 Federal Guidelines.

"In the SEIS Glossary, "user capacity" is defined as the "type and level of use that can be accommodated while sustaining the desired resource and social conditions based on the purpose and objectives of a park." NPS Management Policies (C-4) state that when making decisions about capacities, they should be based "on desired resource conditions and visitor experiences for the area; quality indicators and standards that define the desired resource conditions and visitor experiences; and other factors that will lead to logical conclusions and the protection of the park resources and values." The 1982 Federal Guidelines state that carrying capacity is "The quantity of recreation use which an area can sustain without adverse impact on the outstanding remarkable values and free-flowing character of the river area, the quality of recreation experience, and public health and safety." Thus, the alternatives in the SEIS were based on partial and incomplete information."
(Individual, Fort Collins, CO, Comment #73-2)

Response: User capacity as defined in this plan is consistent with the National Park Service management policies and the 1982 Federal Guidelines. In addition, the user capacity management program as presented in each of the action alternatives have been developed to satisfy the 2004 Court Order requiring the National Park Service to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values.

National Environmental Policy Act and CEQ Regulations

Concern 21: The National Park Service should revise the Revised Merced River Plan to be National Environmental Policy Act compliant.

"Due to all of the above and other reasons the document is not NEPA compliant."
(Individual, Fremont, CA, Comment #51-9)

"The D. R. MRP does not meet criteria under NEPA[.]"
(Conservation Organization, Yosemite, CA, Comment #111-9)

Response: This Final Revised Merced River Plan/SEIS was prepared to be fully compliant with National Environmental Policy Act and the relevant CEQ regulations, as well as the National Park Service Director's Order #12 - Conservation Planning, Environmental Impact Analysis, and Decision-making. In response to public comments, the National Park Service has made changes to the plan.

Concern 40: The National Park Service should consider the potential adverse impacts to visitor experience associated with managed access.

"A resource oriented interpretive staff would be substituted with one run by a police force herding unlimited numbers of Valley visitors to least desirable venues. The visitor experience would be seriously compromised by these alternatives[.]"
(Individual, El Dorado Hills, CA, Comment #27-6)

Response: Potential impacts to the visitor experience have been fully examined and analyzed for each of the alternatives identified in this document. The text of this analysis is presented in the appropriate sections of Chapter V – Environmental Consequences.

Concern 69: The National Park Service should include "tubing" as a winter activity under Recreation in the Affected Environment section of the final document.

"While reading over the revised draft Merced River Plan (Chapter III: Affected Environment page III-86 under the heading of Winter Activities at top of page) I found a list of winter activities at Badger Pass that does not include tubing, though it has been offered by DNC as a guest activity at Badger for the past 3 winter seasons."
(Individual, El Portal, CA, Comment #52-1)

Response: It is recognized that the park offers tubing at Badger Pass during the winter when conditions allow. The text in reference is intended to identify the general areas, Badger Pass being one of them, that is frequently visited within the park for recreational sport activities during the winter months. However, it should be noted that Badger Pass is not within the boundaries of the Merced River corridor and therefore tubing does not occur within the boundaries of the Merced Wild and Scenic River corridor. Based on the above, this concern is not within the scope of this document.

Concern 95: The Revised Merced River Plan should discuss the details of how the National Park Service will regulate use.

"There is far too little discussion in the document on how to accomplish the complexities of regulating use once limits are determined whatever they are."
(Individual, El Dorado Hills, CA, Comment #27-4)

"There are references in the document to increased visitation that would require implementation of restricted access to Yosemite Valley during peak visitation periods, but there is no discussion as to how that restricted access would be accomplished."
(Individual, El Dorado Hills, CA, Comment #27-9)

Response: The Final Revised Merced River Plan/SEIS has been revised in response to this concern by dedicating Chapter II to User Capacity Management and VERP exclusively. However, because the Revised Merced River Plan is a programmatic document, it cannot predict and pinpoint what specific actions will be implemented in the future, as the actions taken will vary depending on the types of impacts that are found. An action taken in one situation or in one area of the park may not be effective in another. Also, as conditions change, as technology changes, and as visitor use patterns change, management strategies must change accordingly. A review of recreation impact management literature documents that there is a wide range of measures that can be effective in reducing or mitigating visitor impacts on resources and visitor experience. Consequently, the measures selected must be based on the specific issues to be addressed. This type of decision-making criteria has been presented in Chapter II (under "Management Action Strategies and Tactics), which includes a list of questions managers would consider when defining and determining the type of action to take. A list of those potential management actions follows this section and is listed in table II-3.

Concern 96: The Revised Merced River Plan should fully disclose the National Park Service's intended actions as guided by this plan.

"DISCLOSURE of the intended action is at the very heart of the NEPA requirements under which this Plan/SEIS was produced. The Plan/SETS utterly fails that most basic requirement --- to let the public know what it is that the Park Service intends to do."
(Conservation Organization, Fresno, CA, Comment #30-2)

"FAILURE TO DISCLOSE...The DRMRP fails to meet the most basic requirement of the National Environmental Policy Act (NEPA), which is that you disclose to the public what it is that you propose to do. It is possible that your intended actions are buried somewhere in the document, but because it is presented in an unintelligible manner, they have not been disclosed. And because you have failed to disclose the actions, it is not possible for the public to make any sense out of discussions of possible environmental impacts. This is a huge violation of NEPA."
(Conservation Organization, Fresno, CA, Comment #113-4)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address these deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

This document describes in detail methods and procedures the park could implement to achieve the above objectives and satisfy the requirements outlined by the Court. Portions of the document have been reorganized and clarifying text has been added in places to more clearly explain to the public all potential actions that could result from the VERP program. Furthermore, based on public comment, table II-4 identifies the typical levels of National Environmental Policy Act compliance that might be necessary for various types of management actions.

Concern 97: The National Park Service should subject any potential management actions to further environmental review and public review.

"In fact, buried in the document is a statement to the effect that these draconian actions could be taken without any further environmental review. If you are going to cram people into a "one size fits all" straitjacket, micromanaging the visitor experience, and damaging the natural resources in the process, we believe it requires further review, ANDPUBLIC COMMENT."
(Conservation Organization, Fresno, CA, Comment #30-7)

Response: The National Park Service is committed conducting the appropriate level of National Environmental Policy Act review prior to the implementation of management actions. Some clarifying text with regard to this issue has been added in this document, including the addition of table II-4 that lists the anticipated level of environmental review necessary for a range of potential management actions.

Concern 374: The National Park Service should subject all subsequent revisions of the *Yosemite Valley Plan* (based on prescriptions called for in the Revised Merced River Plan) to proper National Environmental Policy Act compliance.

"Such amendment of the Valley Plan clearly should have been subject to a major NEPA process, and that is totally lacking…While we are not great fans of the Valley Plan, it nevertheless followed a planning process which had more legitimacy than the present process. Not very much, but significantly more than the DRMRP process has."
(Conservation Organization, Fresno, CA, Comment #113-19)

Response: Once the Revised Merced River Plan/SEIS has been finalized in a Record of Decision, the National Park Service will conduct a review of the actions called for under the *Yosemite Valley Plan*, and will subject them to an additional level of environmental review, if deemed necessary.

Wild and Scenic Rivers Act

Concern 71: The Revised Merced River Plan should more clearly articulate the Outstandingly Remarkable Values in order to adequately protect them.

"The DMRCMP contemplates ORV's that are not fully articulated and thus not adequately protective."
(Individual, Fremont, CA, Comment #51-13)

Response: The location of Outstandingly Remarkable Values within the El Portal segment of the Merced River corridor, were further investigated and identified through this planning process. The El Portal boundary proposed in Alternative 2—the National Park Service's preferred alternative—has been revised in the Final Revised Merced River Plan/SEIS in response to public comment. The newly proposed boundary has expanded to a quarter-mile on either side of the river making the El Portal segment consistent with all other segment boundaries within Yosemite National Park. This boundary includes the maximum acreage per river mile of 320 acres allowed under the Wild and Scenic Rivers Act and also includes portions of the El Portal Administrative Site which do not contain Outstandingly Remarkable Values.

Concern 249: The National Park Service should develop a fully adequate Comprehensive Management Plan with completely protective alternatives as per Wild and Scenic Rivers Guidelines.

"The Wild and Scenic Rivers Act (WSRA) mandates protection and enhancement of the Outstandingly Remarkable Values of the Merced River. The WSRA also requires a Comprehensive Management Plan for each WSR. The CMP is a legally required management method to ensure that the Outstandingly Remarkable Values of the Merced River (including its bed, banks, and related ecological and hydrological systems) are clearly identified and protected using transparent indicators, standards, monitoring, and actions to ensure protection.

The D. R. MPR does not meet the criteria under WSRA because it continues to fail to provide adequate elements of a CMP. Not only is the user capacity portion still defective but it also lacks adequate recognition of Outstandingly Remarkable Values. This plan is not built on protection of Outstandingly Remarkable Values, as required under WSRA"
(Conservation Organization, Yosemite, CA, Comment #111-7)

"[I] find all of the alternatives lacking the complete protection that would be in compliance with the Wild and Scenic Rivers Act. I am sure that just this fact alone will keep the park service from really acting on any of these potential scenarios. They all leave the river vulnerable to building in sites that are within the river corridor designated by the Wild and Scenic Rivers Act."
(Individual, El Portal, CA, Comment #133-2)

Response: The action alternatives identified in this Revised Merced River Plan/SEIS have been developed to satisfy the 2004 Court Order requiring the National Park Service to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. These alternatives identified and evaluated in this document have been developed as a means to achieve this directive, and are compliant with the requirements of Wild and Scenic Rivers Act and relevant National Park Service management policies and procedures.

Concern 363: The National Park Service should consider the true intent of the Wild and Scenic Rivers Act which serves to limit the construction of reservoirs and dams on public lands.

"The purpose of the Wild & Scenic Rivers Act was to limit the construction of dams and reservoirs on public land. Such projects would have to consider the harm done to Outstandingly Remarkable Values identified for a corridor."
(Individual, Redwood City, CA, Comment #110-2)

Response: This concern is recognized in the very first sentences of Chapter I of this document, which states "…it was widely recognized that many of the nations rivers were being dredged, dammed, and degraded at an alarming rate. In response the U.S. congress established the Wild and Scenic Rivers Act in October 1968…" In keeping with the intent of the Wild and Scenic Rivers Act, the National Park Service in Yosemite does not propose construction of reservoirs or dams on the Merced Wild and Scenic River.

Concern 364: The National Park Service should recognize that the Outstandingly Remarkable Values of the Merced River are protected under the National Park Service Organic Act, thereby making the Wild and Scenic designation unnecessary.

"The designation of a Wild & Scenic River inside Yosemite National Park was unnecessary since the Park is effectively managed by the National Park Service under its Organic Act. The NPS did not take steps to immediately amend the General Management Plan because it was unnecessary."
(Individual, Redwood City, CA, Comment #110-3)

Response: The National Park Service often has to comply with multiple statutes for lands within the boundaries of national parks. In many instances, the same land can be protected under the National Park Service Organic Act, a park's enabling legislation, and either the Wild and Scenic Rivers Act or the Wilderness Act or both. Park managers are experienced at addressing the multiple statutory objectives that apply to lands that they manage. In the case of Yosemite, the National Park Service supported and continues to support the inclusion of the Merced Wild and Scenic River in the national Wild and Scenic River System. In some instances, the Wild and Scenic Rivers Act includes additional considerations over and above the Organic Act. One such example is the Section 7 process under the Wild and Scenic Rivers Act, which strictly regulates water resources projects on wild and scenic rivers. The National Park Service does not agree that the designation of the Merced and a Wild and Scenic River was unnecessary or inappropriate.

Concern 366: The National Park Service should recognize that neither the Wild and Scenic Rivers Act, nor the Wilderness Act shall modify Yosemite National Park's congressional designation.

"Ninety percent (90%) of the Park has been designated Wilderness. The NPS has already established a permit system for visitors of these areas. The NPS acknowledges that visitor management of the river corridors within the Wilderness is adequately handled by the Wilderness designation. However, Section 4.(a)(3) of the Wilderness act of 1964 states that "Nothing in this Act shall modify the statutory authority under which units of the National Park system are created." Yosemite Valley was added as a unit to Yosemite National Park by Congress accepting the Yosemite Grant back from the state of California in 1906. The express conditions "...to be held for all time by the United States of America for public use, resort and recreation" were not modified by the Wilderness Act nor could they be. Neither does the Wild & Scenic Rivers Act modify those express conditions. Yet, I find that eighty-six percent (86%) of the Yosemite Grant unit has been designated Wilderness. The River Plan completed by the NPS in 2000, set the river corridor width at one-half mile through the Yosemite Valley unencumbered by the Wilderness or River Plan designations."
(Individual, Redwood City, CA, Comment #110-5)

Response: The National Park Service often has to comply with multiple statutes for lands within the boundaries of national parks. In many instances, the same land can be protected under the National Park Service Organic Act, a park's enabling legislation, and either the Wild and Scenic Rivers Act or the Wilderness Act or both. Park managers are experienced at addressing the multiple statutory objectives that apply to lands that they manage. In the case of Yosemite, the National Park Service supported and continues to support the inclusion of the Merced Wild and Scenic River in the national Wild and Scenic Rivers System. In some instances, the Wild and Scenic Rivers Act includes additional considerations over and above the Organic Act. One such example is the Section 7 process under the Wild and Scenic Rivers Act, which strictly regulates water resources projects on wild and scenic rivers. The National Park Service does not agree that the designation of the Merced and a Wild and Scenic River was unnecessary or inappropriate.

Consultation and Coordination

Concern 197: The National Park Service should continue collaboration and open dialogue with gateway communities in order to balance natural resource use and commerce.

"We in Groveland and Big Oak Flat have worked hard (over the past year or so) to build bridges between the NPS and our communities. It has been our hope and understanding that a collaborative and an open dialogue would result in improved and beneficial consideration for both the NPS and our community. We believe the NPS and a large number of our community's leaders appreciate the importance of mutual cooperation. Without this cooperation, how will balance between natural resource use and commerce be achieved? The RMRP does not reflect this -- in. our opinion. Perhaps, we simply do not see the needed campgrounds, adequate private vehicle parking, or balance with our economic situation. The plan does NOT achieve the issue and concern it claims to address, "How the user capacity program would be implemented and potential impacts to gateway communities.""
(Business, Groveland, CA, Comment #86-6)

Response: During the public review period, the National Park Service engaged in extensive public and stakeholder outreach and consultation to develop this Final Revised Merced River Plan/SEIS, as it did with the 2000 Merced River Plan. Comments received represented a full spectrum of views, values, and ideas to implement them. As a result of consultation, many improvements to the plan were made. The Revised Merced River Plan/SEIS is a programmatic plan that attempts to present a balance of those perspectives while conforming to the policies of the park, and the Wild and Scenic Rivers Act.

As a response to this public concern and to acknowledge that there are many important issues of local, regional, and national interest on which the park must consult and coordinate with stakeholders, park managers continue to explore new and improved communication forums and techniques. One area of emphasis is to work with local communities and the region to coordinate regional visitor attractions, amenities, services, and communications. Park managers welcome all ideas and suggestions on how make communication and coordination more effective.

Public Involvement

Concern 15: The National Park Service should release a new revised Draft SEIS which has incorporated comments on this Draft SEIS and have a subsequent Public Comment Period.

"The present situation is so chaotic that the Park Service needs to continue taking comments to find out what the problems are, then issue a Revised Draft Plan or possibly a Supplement. The Revised or Supplementary Draft then would require a NEW COMMENT PERIOD. Only then would the public be able to make comments that are relevant."
(Conservation Organization, Fresno, CA, Comment #30-3)

"I'm writing to clarify my previous request for an extension of the Draft MRP comment period. While it may be helpful for citizens to have more time to review this extremely confusing Draft Merced Wild and Scenic River Revised Comprehensive Management Plan SEIS, the document still does not protect the Wild and Scenic Merced River and its values. In order to truly protect the Merced River, and thus Yosemite National Park, it is becoming quite obvious to me that this document full of jargon and flawed methodologies must be re-written; and a new comment period should then be opened to the public."
(Individual, El Portal, CA, Comment #50-1)

"[We] ask that the NPS withdraw this draft plan and start over. If the NPS continues with this draft it runs the risk of additional litigation. Why waste time and money to go to court yet again? You know the intent of the plaintiffs, the direction of the court, and the mission statement of the NPS, so pull this plan and do the right thing: write an intellectually honest, scientifically sound, environmentally sensitive, and socially responsible management plan for the Merced River and save Yosemite from the crass commercialism that exists in the current Yosemite Valley Plan"
(County Agency, Groveland, CA, Comment #140-5)

Response: The Draft Revised Merced River Plan/SEIS was available for public review for more than 60 days, consistent with the requirements contained in the CEQ Guidelines and National Park Service Director's Order #12. During this period, 11 public meetings were held, along with a range of other activities conducted by the park's public involvement team. These efforts sought to engage gateway communities, special interest groups, and the general the public in the park's public involvement process for the Revised Merced River Plan/SEIS. The process for facilitating the public's review of this document is discussed in further detail in Chapter VI, Consultation and Coordination.

As a result of public comment process, the planning team has made improvements in the clarity of the document, and included a more protective river boundary and management zoning scheme for the El Portal segment of the river. A discussion of how the document changed from draft to final is presented in text that precedes the Table of Contents in this document.

Concern 23: The National Park Service should work cooperatively with stakeholder groups to re-write the plan.

"The YSVB recommends that the current RMRP be withdrawn from public comment by the NPS and a cooperative effort, with all stakeholder groups represented in the process, be used to re-tool this plan to make it more understandable and consistent with the mission of the National Park Service."
(Individual, Oakhurst, CA, Comment #49-7)

"If and when the park service is sincere in upholding it's mission to protect Yosemite, it will abandon strategies to buy off support through phony gateway partnerships and manipulative disingenuous Delphi Technique seminars instead all choose stakeholders Native Americans campers, disables, gateway communities will be an integral part of the research, the planning, the implementation and the ongoing evaluation. Then all the meaningful scoping comments that the national park service ignored can be put on the table."
(Individual, Oakhurst, CA, Comment #101-3)

"The planning process must incorporate representation from all affected partner groups including gateway communities, campers, rock climbers, indigenous Native Americans, the disable, concessionaires, and local environmental organizations from beginning to end. Such involvement must be active and integral to decision-making as the planning process proceeds. ...Stakeholder groups by virtue of their traditional involvement, economic reliance, and physical proximity to lands managed by government agencies, such as the NPS, have much to offer. The knowledge, expertise and passion of these stakeholders are an asset to land management agencies crafting plans because stakeholders can help the NPS avoid time-consuming litigation that costs taxpayers and agencies millions of dollars annually. Involvement of stakeholder groups can also pave the way for more meaningful and positive comment and hearing periods with the general public."
(Federal Agency, Washington, DC, Comment #136-9)

Response: During the public review period, the National Park Service engaged in extensive public and stakeholder outreach and consultation to develop this Final Revised Merced River Plan/SEIS, as it did with the 2000 Merced River Plan (refer to the description of the outreach effort.) Comments received represented a full spectrum of views, values, and ideas on how they should be implemented. As a result of consultation, many improvements to the plan were made. The Revised Merced River Plan/SEIS attempts to present a balance of those perspectives while conforming to the policies of the park, and the Wild and Scenic Rivers Act.

As a response to this public concern and to acknowledge that there are many important issues of local, regional, and national interest on which the park must consult and coordinate with stakeholders, park managers continue to explore new and improved communication forums and techniques. One area of emphasis is to work with local communities and the region to coordinate regional visitor attractions, amenities, services, and communications. Park managers welcome all ideas and suggestions on how make communication and coordination more effective.

Concern 72: The National Park Service should release the first annual Visitor Experience and Resource Protection report prior to asking the public to comment on the Revised Merced River Plan.

"*How can the public respond to this plan when the first annual VERP report will not come out until after the River Plan comment period?*"
(Individual, El Portal, CA, Comment #48-5)

Response: Park staff developed a set of initial indicators and standards as part of its User Capacity Management Program for the Merced Wild and Scenic River Corridor (NPS 2004a). This program was developed prior to the April 2004 ruling from the U.S. Court of Appeals stating that the park "must prepare a new or revised CMP that adequately addresses user capacities and properly draws the river boundary in El Portal." Over the course of the 2004 field season, Resources Management staff conducted monitoring of these initial indicators and standards. The results were published in the first annual report, which can be viewed on the park's web site (*www.nps.gov/yose/planning/ucmp.htm*). Information and analysis presented in this document will subsequently be used to modify and enhance the program in 2005.

As the park continues to implement the Yosemite User Capacity Management Program, elements of the VERP component will continue to develop and improve with time but the overall implementation process outlined in the program will remain constant.

Concern 85: The National Park Service should communicate with gateway communities and local people if and when management actions are taken to limit or redirect use in the park.

"*I just think that we need communications with the gateway communities and also with the local people, because you know in the summer time we get our visitors in the summer, and they want to come to Yosemite Valley, and they certainly want to see Half Dome and that part of the park. So can they be sure if they bring visitors in that they can see this part of the park?*"
(Individual, Mariposa, CA, Comment #32-3)

"*There is also no mention of the strategic public relations plan to ensure that visitors and gateway community leaders will have ample notice.*"
(Conservation Organization, Oakland, CA, Comment #69-9)

"*If you are going to study VERP for the next five years do it right. Be exhaustive and very thorough. Make sure that you over communicate your findings to the public so that they understand why you may have to take management actions. For example, before redirecting traffic as described above, the public would need to be told what the standard was that was being exceeded and how the standard had been determined. It would need to be made clear why the redirection of traffic was in the best interests of both the park and the visitor experience.*"
(Conservation Organization, Oakland, CA, Comment #69-15)

Response: The National Park Service is committed to fostering clear communication with gateway and local communities regarding management actions that would either limit or redirect use within Yosemite National Park. The National Park Service is currently working with gateway and local communities to develop a regional communications strategy to provide for timely and effective communications between Yosemite and the surrounding area.

Concern 98: The National Park Service should extend the public comment period.

"[A] short but reasonably extended public comment period would insure a more meaningful public review process."
(Individual, El Dorado Hills, CA, Comment #27-3)

"I am writing to request that there be an extension of the March 22, 2005 comment deadline of the Draft Merced Wild and Scenic River Revised Comprehensive Management Plan SEIS. ...If a comment period extension is given, the public will be better able to participate in making this document a truly protective plan for the Wild and Scenic Merced River and Yosemite National Park. Based on the size of the plan and what is at stake, I suggest extending the comment period for at least three months."
(Individual, El Portal, CA, Comment #47-1)

"I respectfully request that the Merced River Plan comment period be extended. With more time to study and continue conversation we will be able to submit more thoughtful and informed comments on this important and complex document."
(Individual, Yosemite, CA, Comment #58-1)

Response: The Draft Revised Merced River Plan/SEIS was available for public review for more than 60 days, consistent with the requirements contained in the CEQ Guidelines and National Park Service Director's Order #12. During this period, 11 public meetings were held, along with a range of other activities conducted by the park's public involvement team. These efforts sought to engage gateway communities, special interest groups, and the general the public in the park's public involvement process for the Revised Merced River Plan/SEIS. The process for facilitating the public's review of this document is discussed in further detail in Chapter VI, Consultation and Coordination.

The National Park Service acknowledges that by its nature, the issue of developing and implementing a user capacity management program in Yosemite National Park has been challenging for some members of the public to understand. As a result of the public comment process, the planning team has made improvements in the clarity of the document. A discussion of how the document changed from draft to final is presented in text that precedes the Table of Contents in this document.

Concern 229: The National Park Service should distribute the Fact Sheets in the same manner as the draft plan.

"In some cases there are contradictions between the fact sheets and the draft plan. There are several instances when it is very difficult to cross-reference the fact sheets to the draft plan. When there are discrepancies, should people be commenting on the fact sheet or the plan? Also these sheets were discovered on a table during the road show. Since they were not mailed out how are we sure that the people who received copies of the draft plan via mail were even aware that these fact sheets exist?"
(Conservation Organization, Oakland, CA, Comment #69-7)

Response: The National Park Service recognizes this public concern. Fact sheets on park planning projects are provided to briefly highlight and summarize some of a project's major elements.

These 1- to 2-page informational hand-outs are intended only to summarize information that is presented in an Environmental Assessment or Environmental Impact Statement. All fact sheets are available to the public at monthly Open Houses and public meetings for park planning projects. The online link for fact sheets is posted prominently on the park's web site at *www.nps.gov/yose/planning*. The park's electronic newsletter and Planning Update newsletter often highlight where the public can go on the web site to receive additional information. While the fact sheets are intended to summarize key elements of a specific project and highlight planning or project timelines, it is the planning document itself (i.e., the EA or the EIS, for example) that must be the focus of public comment.

Concern 254: The National Park Service should disclose the names of the individuals who have read the public's comments in their entirety.

"FoYV and MERG would like to understand who actually reads these comments. Toward that end, FoYV and MERG request that Superintendent Tollefson inform us of the names of any of the following who have actually read these comments in their entirety, not merely received them as a cut and paste Comments Summary: any of the D. R. MRP planning team, any YNP Administrators and/or Managers, scientists, Resource Dept. people, and other YNP employees involved at all in this planning process, including as consultants or commentors on the development of this Draft Plan, and any of the consultants hired by the Park Service to work on this plan."
(Conservation Organization, Yosemite, CA, Comment #111-121)

Response: Numerous members of the planning team have taken part in reading and analyzing public comments. From project managers to public involvement staff to the Superintendent and division chiefs, each letter is carefully considered. In cases of longer letters, the process of analysis can sometimes take up to 10 hours. The National Park Service analyzed each individual comment letter received on the Draft Revised Merced River Plan/SEIS in its entirety through the Comment Analysis and Response system. A detailed discussion of the Comment Analysis and Response process can be found in Chapter VI: Consultation and Coordination of the Final Revised Merced River Plan/SEIS. Additionally, Chapter VII, List of Preparers includes the names, responsibilities, education, and years experience of those who took park in preparing and/or reviewing the document.

Concern 255: The National Park Service should post Draft Revised Merced River Plan/SEIS public comment letters on the Yosemite National Park web site and make them available to the public on CD.

"While I appreciate that YNP posted the D. R. MRP Scoping comments from the public on the NPS Yosemite Planning web site, in order to further engage citizens in your planning process, I ask that all comments to the D. R. MRP also be posted to the NPS web site as soon as possible and a CD made available to the interested public. Please remember that you have been charged with caring for an especially unique part of the earth as well as a designated Wild and Scenic River, please take the time to view the big picture here—only sincere efforts by the NPS towards transparency and inviting (and truly considering) public comments will help preserve and protect Yosemite National Park and the Wild and Scenic Merced River for generations to come."
(Individual, El Portal, CA, Comment #109-3)

"We appreciate that YNP posted the D. R. MRP Scoping comments from the public on the NPS Yosemite Planning web site. In order to further public knowledge and dialogue, we ask that all comments to the D. R. MRP also be posted to the NPS web site as soon as possible and a CD made available to the public. We would like our comments to be attributed to FoYV and MERG."
(Conservation Organization, Yosemite, CA, Comment #111-126)

Response: In response to this public concern, the National Park Service has posted public comment letters received on the Draft Revised Merced River Plan/SEIS on the park's web site (*www.nps.gov/yose/planning/*). These public comment letters are also available on CD-Rom by request.

Concern 288: The National Park Service should solicit comments from the millions of visitors that are here each summer.

"Getting the input from America about this with only 2-3 months notice does not seem like the NPS want or need any comments. If you want comments why not solicit the millions of visitors that are here in the summer season?"
(Individual, El Portal, CA, Comment #72-3)

Response: The National Environmental Policy Act (NEPA) requires the National Park Service to post a Notice of Intent (NOI) in the *Federal Register* to announce the opening of a public scoping period prior to the development of a park planning project and entertain the public's opinions on the purpose for and need of a project. In addition, NEPA requires the National Park Service to post a Notice of Availability (NOA) in the *Federal Register* to announce the availability of a Draft Environmental Impact Statement and the opening of the public comment period associated with the document.

Monthly Open Houses and public meetings during the public comment period on the Draft Revised Merced River Plan/SEIS hosted by the National Park Service provided an additional forum for the public to provide comments. These open house events are regularly advertised in *Yosemite Today*, the park's free newspaper handed out to all visitors at entrance stations and visitor centers throughout the park. Additionally, all open houses and public meetings (including announcements regarding public comment periods) are posted to the park's web site, where millions of would-be Yosemite visitors gain trip planning information. In the last year, notices regarding planning efforts and meetings have been posted on park bulletin boards in campgrounds, stores, and post offices. As part of its ongoing public involvement and outreach process, the National Park Service will continue to increase efforts to gain more public participation during park planning processes.

Concern 294: The National Park Service should recognize that many scoping comments were not considered in the Revised Merced River Plan.

"Scoping Process: Many comments were submitted during the scoping process about day-use parking and the replacement of low-cost, low-impact drive-in campsites. The DRMRP does not reflect these comments, which is a distressing sign that public input is being disregarded."
(Federal Agency, Washington, DC, Comment #136-1)

Response: The National Park Service takes all scoping comments into consideration. Every scoping letter and all public testimony received during scoping meetings for the Revised Merced

River Plan/SEIS was analyzed in accordance with the park's Comment Analysis and Response process (presented in detail in Chapter VI). However, not all comments were applicable to the scope of this planning effort. Some scoping comments received were too specific for this programmatic plan or called for actions outside of the jurisdiction of the Wild and Scenic Rivers Act. The complete "Public Scoping Comment and Response Report" for this planning effort—as well as all original written comments—can be viewed online at *www.nps.gov/yose/planning/mrp/revision/scoping/index.htm*

Concern 296: The National Park Service should recognize the importance of public participation and that declining participation at public meetings reflects a lack of confidence in the National Park Services' willingness to take public input into consideration.

"Public participation is essential to the planning process for our federal lands. Unfortunately, I understand that public participation at the hearings on the DRMRP declined from previous such hearings. I fear this reflects a lack of confidence from the public in the National Park Services' (NPS) ability to listen and take public input into consideration."
(Federal Agency, Washington, DC, Comment #136-4)

Response: Although attendance at public meetings during the public comment period on the Draft Revised Merced River Plan/SEIS was lower than past planning processes associated with the 2000 Merced River Plan, numerous public comment letters resulting in over 900 separate comments and approximately 400 concerns were received. The National Park Service has worked diligently to provide information to the public regarding the Revised Merced River Plan/SEIS and all other park plans and is committed to finding new ways to encourage people to participate in public meetings. For a detailed discussion of the public involvement see Chapter VI: Consultation and Coordination.

Concern 301: The National Park Service should incorporate public comments into the planning process, and should better express how their comments are acknowledged and affect the outcome of the planning effort.

"I've often felt the excitement and importance of offering up my opinions to your planning process, but also the cynical feelings of hopelessness and futility that my concerns will be genuinely addressed or considered."
(Individual, El Portal, CA, Comment #132-1)

"There are many in the local community that dismiss the NEPA process as pointless, because NPS has "already decided what they are going to do.,"...hope that my concerns, and those of countless others, make significant changes and improvements to the current Draft MRP."
(Individual, El Portal, CA, Comment #132-2)

Response: The National Park Service agrees that planning efforts should express how public comments affect a plan's revision. For a detailed discussion of the park's Comment Analysis and Response process, please see Chapter VI: Consultation and Coordination in the Final Revised Merced River Plan/SEIS. This section includes a detailed explanation of how public comments are incorporated into the planning process. In addition, see "Summary of How the Document Changed in Response to Public Comment" located before the Table of Contents in the Final Revised Merced River Plan/SEIS. As indicated in the summary for this appendix, the public comment process has led to a number of changes between the Draft and Final Revised Merced River Plan/SEIS.

Concern 347: The National Park Service should open a new comment period once an alternative is selected so that gateway communities can gauge the potential economic impacts and plan mitigative measures.

"The County of Madera request that a second period for comment be established after a definite planning alternative is selected. Since the exact effect on the economy of eastern Madera County is largely linked to what alternative is selected and what management actions are initiated as a result, this second response period would allow for more precise and meaningful input. At minimum, this second public review period would allow the County to gauge the economic impact of the chosen alternative and plan mitigative measures to offset those impacts."
(Business, Madera, CA, Comment #129-2)

Response: The National Park Service is committed to continued dialogue with gateway communities regarding implementation of the proposed User Capacity Management Program as described in the Revised Merced River Plan/SEIS. The National Park Service acknowledges that there are many important issues of local, regional, and national interest on which the park must consult and coordinate with stakeholders. Park managers continue to explore new and improved communication forums and techniques. One area of emphasis is to work with local communities and the region to coordinate regional visitor attractions, amenities, services, and communications. Park managers welcome all ideas and suggestions on how make communication and coordination more effective.

Concern 350: The National Park Service should ensure requested CDs are delivered.

"(Please note that I requested a CD but did not receive one)."
(Individual, San Francisco, CA, Comment #121-1)

Response: The National Park Service agrees with this concern and apologizes for any past inconveniences regarding delivery failure of CDs. Yosemite planning teams are eager to receive any feedback that will help the park continue to improve public involvement and outreach.

Concern 351: The National Park Service should do a better job at public outreach to ensure that they receive more comments throughout the National Environmental Policy Act process.

"[D]espite your press releases and public meetings, you only received 113 written comments from individuals [during scoping] If this is correct, this should not be acceptable. It means that many visitors and those concerned with the integrity of one of the most amazing places in this world have no understanding of what is going on."
(Individual, San Francisco, CA, Comment #121-3)

Response: Yosemite's public outreach program includes holding public meetings in new venues, conducting informational meetings with community groups and interested parties upon request, sharing new developments through site visits and "walk-thrus," expanding out reach through the park's web site, sharing information and important notices through the electronic newsletter (an email news letter with a growing list of over 4,600 recipients) and the park's Planning Update newsletter (8,000 recipients). In addition, the National Park Service hosts monthly Open Houses in which the public is invited to discuss plans and projects with park staff. A detailed discussion of the public involvement process for the Revised Merced River Plan can be found in Chapter VI: Consultation and Coordination. In addition, a discussion of "Summary of How the Document Changed in Response to Public Comment" can be found before the Table of Contents in the Final Revised Merced River Plan/SEIS. Park managers welcome all ideas and suggestions on how make communication and coordination more effective.

Concern 352: The National Park Service should better convey public concerns when summarizing scoping processes.

"The summary of comments raised in the "scoping process" were very broad and fell into six categories and convey little about the public's concerns."
(Individual, San Francisco, CA, Comment #121-4)

Response: The Draft Revised Merced River Plan/SEIS provided a summary of the public scoping comments to represent the type of comments that were received by numerous commentors. The complete "Public Scoping Comment and Response Report" for this planning effort—as well as all original written comments—can be viewed online at *www.nps.gov/yose/planning/mrp/revision/scoping/index.htm* . Likewise, the Final Revised Merced River Plan/SEIS provides a summary of public comments received on the Draft Revised Merced River Plan/SEIS. Appendix F contains the complete Summary of Public Concerns and Responses. This report provides a comprehensive examination of all public comments received on the Draft Revised Merced River Plan/SEIS. All written public comments can be viewed on the park's web site at *www.nps.gov/yose/planning/mrp/revision/.*

Concern 370: The National Park Service should clarify whether Fact Sheets are considered an addendum to the Revised Merced River Plan and if so, proper notification should be given to the public that Fact Sheets are available and how they may be obtained.

"In the first place, probably very few people have discovered the existence of the Fact Sheets, either on the YNP web site or on a table at a public meeting. For those who have discovered the Fact Sheets, there is another problem. Is the public supposed to accept the Fact Sheets as being "Addenda" to the Plan? From a legalistic perspective, there would be a problem with this because there has not been adequate notice or distribution of the Fact Sheets…From a legal perspective, the statement [about turning people away at the gates] in the DRMRP would be determining [over the factsheet that stated otherwise]. That is the statement which is up for public review and comment. Yet the NPS is putting out other statements which lead the public to think that the NPS has no intention of using a quota system, thereby biasing public comment. Those who don't want a quota system will see the statements they want and be lulled into complacency. And yet those who do wish to see a quota system will see what they are looking for, and be satisfied."
(Conservation Organization, Fresno, CA, Comment #113-11)

Response: For years, fact sheets on park planning projects have been used to briefly highlight and summarize some of a project's major elements. These 1- to 2-page informational hand-outs are intended only to summarize information that is presented in an Environmental Assessment or Environmental Impact Statement. All fact sheets are available to the public at monthly Open Houses and public meetings for park planning projects. The online link for fact sheets is posted prominently on the park's web site at *www.nps.gov/yose/planning.* The park's electronic newsletter and Planning Update newsletter often highlight where the public can go on the web site to receive additional information. In the future, the National Park Service will work to more closely articulate plan elements with consistency and accuracy.

Concern 401: The National Park Service should allow for longer review periods of documents the public is asked to comment on.

"My first comment related to the Draft Revised MRP, however, is that it is an overwhelming document to digest in the amount of time that was given for response from the public…if the NPS truly wants people to be able to comment fully on their documents, there needs to be more time allowed from the publishing of the document to the end of the comment period."
(Individual, El Portal, CA, Comment #120-1)

Response: The National Park Service solicits public comments on Environmental Assessments and Environmental Impact Statements in accordance with National Park Service guidelines and National Environmental Policy Act (NEPA) regulations. During the public comment period on the Draft Revised Merced River Plan/SEIS, the National Park Service hosted a series of public meetings and monthly Open Houses to provide a forum in which the public could discuss plan elements with park staff in person. The public review period for the draft plan exceeded the required 60-day period for environmental impact statements and took place from January 14 through March 22, 2005.

Concern 443: The National Park Service should arrange a public forum to facilitate better understanding of park directives for park projects.

"Finally, to bring into discussion and a full review of said projects with a general public forum (to be arranged by the Park Services to necessitate a better understanding of your directions of said projects"
(Individual, Palo Alto, CA, Comment #139-4)

Response: For over 4 years, the National Park Service has hosted monthly Open Houses in Yosemite Valley in the Visitor Center Auditorium to facilitate better understanding of park plans and projects. Project managers, compliance specialists, and division chiefs and park staff are available at every event to discuss individual projects. During the public comment period for the Draft Revised Merced River Plan, the planning team (including the Superintendent and Deputy Superintendent) traveled extensively to provide information about the plan, engage in conversations, and receive comments either in writing or through public testimony.

Written Comments

Concern 73: The National Park Service should have posted all public scoping letters and the public scoping report for the Revised Merced River Plan on the park's web site prior to the release of the Draft Revised Merced River Plan/SEIS.

"COMMENTS: The Federal Register Announcement (1/4105) concerning the upcoming release of the Revised Merced River Plan made reference to a Scoping Report being available. On January 12, we requested a copy of the Scoping Report; though we had already spent considerable time reading the scoping letters posted on- line, we were interested to see how the Park framed the content of those letters. We received no reply. On January 26, we sent a 2' request. The response was that "staff is working on the finalization of the Scoping Report for the Revised Merced River Plan and will have it posted to the Website as soon as possible. To date, there is still no such report posted."
(Individual, Oakhurst, CA, Comment #55-53)

"I must also remark on the supposedly public process the NPS has set up for this plan. While I applaud them for heeding public requests and posting scoping comments on their website, I wonder why my comments weren't among the 113 letters, faxes, and emails that are available for viewing."
(Individual, El Portal, CA, Comment #57-5)

Response: The National Park Service agrees with this concern and apologizes for the delay in posting all public scoping letters and the public scoping report to the park web site prior to the release of the Draft Revised Merced River Plan/SEIS. However, public scoping letters were posted during the 60-day public review period of the Draft Revised Merced River Plan/SEIS. Posting of public scoping letters to the park's web site was done in response to a request received during the scoping period. Members of the public are encouraged to check the web site to make sure their letter is posted. If it is not, please contact the National Park Service.

Public Meetings

Concern 273: The National Park Service should have given more timely notice of public meetings and advertised the meetings better.

"There was not adequate nor timely notice about public meetings. Lack of attendance at public hearings around the state appears to be vote of no confidence by the public as to the NPS listening to their concerns and even answering questions."
(Conservation Organization, Yosemite, CA, Comment #111-55)

"How can advertising for public meetings be improved? Not many people attended the one I was at. Would advertising free entrance (1X) (for off season) to the park help bring more people to the meetings?"
(Individual, Fresno, CA, Comment #128-25)

Response: On January 19, 2005, the National Park Service issued a press release to over 80 local and regional media outlets to advise the public that the Draft Revised Merced River Plan/SEIS was available for public comment. Also on this date, the same announcement was circulated via email to 4,200 recipients through the Yosemite Electronic Newsletter. On February 14, 2005 another press release was circulated to advertise the dates, times and locations of the nine public meetings to be held across the state of California. On February 15, the same announcement was circulated via the electronic newsletter to 4,338 recipients. The National Park Service also placed nine paid advertisements in local and regional newspapers regarding the dates, times, and locations of public meetings. In addition, over 8,000 people received the park's Planning Update newsletter by mail, which provided information about the schedule of public meetings. The public comment period—including public meeting schedule—is directly tied to the release of the Notice of Availability published in the *Federal Register*.

Concern 285: The National Park Service should consider having an open question and answer period at public meetings when discussing plans.

"I appreciated the public meetings and the willingness of the NPS staff to share information at those meetings...I was disappointed, however, when the NPS was so adamantly against the public's request to have a full group question and answer period after the public comments... If the park wants the public to be educated on the issues, then why restrict questions and answers at a time when all of the NPS experts on the plan are right there to comment directly? ...we were told that we could travel in groups to ask questions of individual experts on the different topics. This was helpful, but did not nearly achieve the goal of deeper understanding of the different issues that a full group discussion with all of the experts could have achieved. The issues are all interrelated and to not let the public address them as such seemed contrived to lessen our full understanding... While I feel that my understanding of the plan would have benefited from a group Question and Answer period with all of the MRP staff as well as all of those attending the meeting, it was clear that the NPS did not want this group discussion to occur. Why is this? Is there a fear of the public learning from each other? Or understanding the plan too well? I hope that this comment will be considered in the presentation of future park plans."
(Individual, El Portal, CA, Comment #120-2)

"At the D. R. MRP hearings in El Portal and Mariposa, the public asked to be able to ask questions of the NPS planners and representatives in an open forum. The request was in order to have a public dialogue, rather than the one way presentation by NPS and the one way testimony from the public. Those methods do not allow for a public dialogue and discourse which people are hungry for and asking for. NPS turned the public down flatly on their reasonable requests. Requests that could have potentially be helpful to NPS in creating a valid CMP."
(Conservation Organization, Yosemite, CA, Comment #111-117)

Response: During the public comment period on the Draft Revised Merced River Plan/SEIS, the National Park Service hosted eleven public meetings and two Open Houses in order to have open dialogue with the public regarding the plan. The format for each public meeting allowed for extensive time for the public to have an open question and answer period with park staff and members of the planning team. In fairness to all participants who attended public meetings, five minutes was allotted to each speaker during public testimony in order to summarize the speaker's main points. The National Park Service encouraged group discussions between the public and park staff prior to and following each public testimony session. Although the meeting format was structured the same at every venue, there was room for flexibility. For example, at some venues, the audience broke up into small groups to discuss various aspects of the plan with management staff and the planning team. This worked very well and some great discussions ensued. However at other venues, participants preferred to speak one-on-one with the team. The National Park Service will continue to explore new ways to engage in conversations with the public.

Concern 342: The National Park Service should spend less money on lavish public presentation displays.

"The displays for public presentation are too lavish and too much and I don't feel are needed. Keep it simple and low cost."
(Individual, Fresno, CA, Comment #128-23)

Response: Presentation materials used by the National Park Service at monthly Open Houses and at public meetings are intended to highlight major elements of park planning projects. The types of materials used for the Revised Merced Rive Plan/SEIS planning process were intended to enhance the public's understanding of plan alternatives. Because the user capacity program of this plan has multiple components, a number of displays and hand-outs were designed to help illustrate the plan's various user capacity elements.

Alternatives

Concern 367: The Revised Merced River Plan should provide a Comparison of Alternatives that provides location where further information can be found in the document.

"COMPARISON OF ALTERNATIVES: When we first obtained the DRMRP, we turned to the Comparison of Alternatives (Table II-14, pages II-78 and 79). With most EIS's, the Comparison of Alternatives provides a good overview of the document, and offers clues for where to turn in the overall document in order to pursue specific areas of concern. But with Table II-14 in the DRMRP we drew a complete blank, and could make no sense of it. We found Table II-14 to be utterly confusing."
(Conservation Organization, Fresno, CA, Comment #113-5)

Response: The Comparison of Alternatives table has been revised to refer to the location where further information can be found in the document.

Concern 368: The National Park Service should clearly state whether or not the Alternatives are intended to be comparable.

"Later, in discussions with NPS staff, we were told that each of the action alternatives was constructed in a way that is so totally different from the other alternatives that any attempt to compare them would be futile. They were not intended to be comparable. But, rather than saying this, the DRMRP has provided the public with Table II-14, thereby creating great confusion and frustration among those who are trying to understand the Plan/SEIS. This is but one illustration of our statement that the Plan is incomprehensible, and therefore not compliant with NEPA."
(Conservation Organization, Fresno, CA, Comment #113-6)

Response: In response to this concern, the Final Revised Merced River Plan/SEIS presents a discussion regarding the plan's approach to user capacity in the rewritten Executive Summary. This discussion is also captured in the introduction to the Alternatives chapter. A user capacity program for Yosemite National Park most addresses a spectrum of uses occurring in widely diverse areas and resulting in varying environments being affected throughout the Merced River corridor. The Revised Merced River Plan/SEIS proposes different *approaches* to addressing user capacity. Yosemite's existing user capacity tools and the VERP program are common to all of the action alternatives, yet some of the new proposed limits (and methods) are not. In accordance with National Environmental Policy Act, the environmental effects of the alternatives are comparable and are analyzed and presented in the document in comparative form. Readers can understand from the environmental consequences discussions in Chapter V the differing effects of each of the alternatives on various aspects of the human environment.

Alternatives – Development Considerations

Concern 154: The Revised Merced River Plan should clarify why VERP was the only user capacity program used and evaluated in the alternatives.

"The decision to only consider VERP-based alternatives needs clarification. Alternatives 2, 3, and 4 include VERP as the keystone of the user capacity program. The prominence of VERP throughout the document justifies a little more description in order for the decision maker and public to adequately understand. Such a description would also help to justify why no non-VERP alternatives were considered in the SEIS and defend against criticism that you did not provide a range of alternatives that included non-VERP options."
(Individual, Fort Collins, CO, Comment #73-33)

Response: The National Park Service recognizes this concern and in response, has dedicated Chapter II of the Final Revised Merced River Plan/SEIS to further clarify the role of VERP as a component of Yosemite National Park's User Capacity Management Program. How much use should be allowed on public lands has been an issue since public lands were first set aside for protection and enjoyment. In the past, the question of how much public use is appropriate in a national park has been framed in terms of what is known as the visitor *carrying capacity*. A number of user capacity management approaches have been developed that are widely used throughout the United States and Canada, including Limits of Acceptable Change (LAC), Recreation Opportunity Spectrum (ROS), Visitor Impact Management System (VIMS), and others. The National Park Service has adopted a method in many of its park units that best fits the needs of its mission—the Visitor Experience Resource Protection (VERP) framework. Although developed specifically to address the mission of the National Park Service, VERP shares a basic framework with these other user capacity management approaches. As part of the development of the Draft Revised Merced River Plan/SEIS, these other methods were considered. However, it was determined by the planning team that VERP best fit the goals and objectives of Yosemite National Park.

Concern 213: The Revised Merced River Plan should develop user capacity alternatives that provide immediate protection of the Outstandingly Remarkable Values.

"The NPS Preferred Alternative (or any of the alternatives in this plan) does not fulfill the requirement to address user capacity--it merely makes some statements that it may or may not complete VERP in about 5 years from now. But Yosemite's Wild and Scenic Merced River Outstandingly Remarkable Values need to be protected now. The D. R. MRP NPS Preferred alternative would not be a complete nor compliant CMP."
(Conservation Organization, Yosemite, CA, Comment #111-8)

"The NPS Preferred Alternative, nor any other of the alternatives, do not fulfill the requirement to address user capacity. The Preferred alternative which uses VERP merely makes some statements that it may or may not complete VERP by around 5 years from now. Outstandingly Remarkable Values need to be protected now. VERP as used in the preferred alternative only addresses visitor impacts, and not specifically to Outstandingly Remarkable Values, and does not address NPS project impacts -- which are greater."
(Conservation Organization, Yosemite, CA, Comment #111-84)

"The D. R. MRP fails to adequately address user capacity. (see Haas, p.xx). The NPS preferred alternative merely makes some vague statements that is may or may not complete VERP by around 5 years from now. The D. R. MRP is not a completed nor a compliant CMP"
(Conservation Organization, Yosemite, CA, Comment #111-88)

Response: The action alternatives identified in this Revised Merced River Plan/SEIS have been developed to satisfy the 2004 Court Order requiring the National Park Service to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. The alternatives identified and evaluated in this document have been developed as a means to achieve this directive, and are compliant with the requirements of Wild and Scenic Rivers Act and relevant National Park Service management policies and procedures.

Although the VERP process could take up to 5 years to fully refine and implement, elements of the park's existing user capacity management program, coupled with the initial VERP program elements currently being implemented by the park will serve to protect and enhance the Outstandingly Remarkable Values compliant with Wild and Scenic Rivers Act requirements in the interim.

Range of Alternatives

Concern 136: The Revised Merced River Plan should be revised to present a comparable range of alternatives using a common user capacity program with varied and measurable limits.

"The alternatives are not sharply comparable, clear, to the point, distinct, nor transparent. The SEIS offers four different programs and processes to address user capacity, rather than four user capacity limits or measurable limits. The public does not care about the program or process or how you package the specific measurable user limits, rather they want to be able to understand and evaluate the alternative numerical limits. The alternatives need significantly more clarity, transparency and comparability."
(Individual, Fort Collins, CO, Comment #73-6)

"These four [user capacity alternatives] programs and processes are further complicated by a mixture of terms scattered throughout such as quotas, limits, segments, zones, interim, fixed, existing use, maximum capacity, maximum annual, etc. The SEIS is currently too complex and requires an unreasonable amount of tedious study for the decision maker and public to understand."
(Individual, Fort Collins, CO, Comment #73-7)

"Another issue is your use of different capacity metrics across the alternatives which make it virtually incomprehensible to understand and to evaluate their comparative merits. You need consistent metrics across all four alternatives rather than mixing apples, and oranges, and prunes as is conveyed in the narrative description of the alternatives and most blatantly on Table II-14."
(Individual, Fort Collins, CO, Comment #73-11)

Response: The National Park Service recognizes this concern and in response, has dedicated Chapter II of the Final Revised Merced River Plan/SEIS to further clarify the role of VERP as a component of Yosemite National Park's User Capacity Management Program. While there are many assumptions about user capacity that are widely accepted by most in the recreation management field, there are disagreements regarding other user capacity issues. For example, the National Park Service and some other organizations believe that management of areas through the use of specific indicators and standards is sufficient to address user capacity and that there has been too much focus on capacity as "a number of people." Others believe that a number (or range) of users must be established for each management area in addition to the indicators and standards. Since there are differences in opinion on whether a specific number of users must be identified in a user capacity program, the National Park Service decided to include some alternatives in this document that looked at specific limits on numbers of people, as well as other types of limits.

Concern 166: The Revised Merced River Plan should present a range of comparable and comprehensible Alternatives that are actually implementable.

"Each alternative is presented as a separate process. What is the difference between Interim Limits and Segments Quotas? Try to compare Table II-6 (page II-33) and Table II-11 (page II-59). They are not using the same forms of measurement to make them comparable."
(Conservation Organization, Oakland, CA, Comment #69-3)

"I think the range of alternatives proposed in the Draft SEIS is not adequate to comply with the intent of NEPA. It appears that three of the four alternatives cannot be implemented as presented. I do not believe it is feasible to implement either Alternative 3 or Alternative 4 because the NPS does not have the capability to monitor and control visitor use of the river corridor on a segment by segment basis, or on a management zone basis. Thus, alternative 3 and Alternative 4 are not viable alternatives."
(Individual, Fresno, CA, Comment #82-2)

"The range of alternatives is unreasonably narrow. Two of the alternatives use the same numeric limit on use, 5.3 million. That is about 1 million more people than have ever visited the park in a given year. None of the alternatives appear to consider a reduction in use; and relatedly a reduction in the facilities provided visitors, in order to reduce impacts to River Outstandingly Remarkable Values and provide for enhancement."
(Conservation Organization, Yosemite, CA, Comment #111-61)

Response: Yosemite National Park is committed to fully implementing a User Capacity Management Program that includes the VERP program as a key component. Park management staff has determined that Alternatives 2, 3, and 4 as presented in this document are all feasible. However, each alternative has various constraints and complexities with regard to implementation, as documented in the environmental analysis (Chapter V), particularly with regard to the visitor experience and park operations.

Alternative 1— No Action Alternative

Concern 99: The Revised Merced River Plan No-Action Alternative should be re-defined as no new or additional development.

"In considering the 4 alternatives, it is worth noting that the "No Action" Alternative (A1) meets the letter of the law but not its intent. "No Action" was intended to mean "no new or additional development" or "no project", rather than a simpler but environmentally less protective "let the status quo lie" approach. A1 would leave in place the existing Merced River Plan and, by omission, would not address the real concerns of your prior commentators nor those of the 9th Circuit. Nonetheless, I do not fault NPS for taking a strict interpretation in difficult budget times – the fault lies with Congress and the American voters for choosing to fund war rather than hospitals, senior care, education, libraries, and parks."
(Individual, Berkeley, CA, Comment #4-4)

"Alternative 1 is incorrectly named the No Action alternative. It would contemplate the continuation of lots of new construction."
(Individual, Fremont, CA, Comment #51-7)

Response: Under National Environmental Policy Act, Alternative 1 (the No Action Alternative) represents a baseline of existing conditions in order to serve as a basis for comparison with other action alternatives. As such, the No Action Alternative in this document represents conditions as of October 2003 when the Ninth Circuit Court of Appeals found that the National Park Service needed to further address user capacity for the Merced River corridor. Alternative 1 would continue to mange user capacity within the Merced River corridor through the various user capacity methods presented in Chapters II and III. The management direction under Alternative 1 would continue to be based on the 1980 *General Management Plan* and other applicable park management plans and guidelines that address wilderness, fire management, vegetation management, resource management, geologic hazards, floodplains, and cultural resource management. Requirements of the Wild and Scenic Rivers Act, such as the protection and enhancement of Outstandingly Remarkable Values and compliance with Section 7 of the act for water resources projects, would continue to be followed. However, new or additional development would be allowed to proceed without the benefit of information gathered as part of the VERP program, which could influence land use planning decisions based on the condition of the Merced River's Outstandingly Remarkable Values.

Concern 100: The National Park Service should select Alternative 1 as the preferred alternative.

"I prefer alternative 1, No Action. I don't like the quotas imposed by alternatives 3 and 4. And I also don't like the reduction in river recreation that would result from alternative 2."
(Individual, Kensington, CA, Comment #7-1)

"Revision of River Corridor in El Portal. The [Wawona Town Planning Advisory] Committee urges that the chosen Alternative be #1 (No Action)."
(City Agency, Mariposa, CA, Comment #138-5)

Response: The Revised Merced River Plan/SEIS analyzed a range of reasonable and feasible alternatives that addressed the 2004 Court Order to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El

Portal Segment based on the location of Outstandingly Remarkable Values. Based on this comparative analysis, and given full consideration of Section 101 of National Environmental Policy Act, Alternative 2 was determined to be the environmentally preferable alternative for the Revised Merced River Plan/SEIS, and thus was selected as the park's preferred method of achieving the plan's goals. Given the direction from the Ninth Circuit Court of Appeals to institute a user capacity program and reassess the El Portal boundary, the No Action Alternative is only provided as a baseline for comparison.

Concern 252: The Revised Merced River Plan should develop a No Action alternative that considers a state of management before the original Merced River Plan was adopted.

"The No Action Alternative is not valid."
(Conservation Organization, Yosemite, CA, Comment #111-12)

"The D. R. No Action Alternative is not a true no action alternative. A proper no action alternative would consider the state of management before the CMP was ever adopted, not at the time of the Ninth Circuits decision. The Ninth Circuit held that the CMP was invalid and a proper no action alt must be the same no action alt that was included in the first CMP."
(Conservation Organization, Yosemite, CA, Comment #111-60)

Response: The Revised Merced River Plan/SEIS analyzed a range of reasonable and feasible alternatives that addressed the 2004 Court Order to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. It would not be proper to include a No Action alternative that described the environmental status quo prior to the 2000 Merced River Plan. Since the original Merced River Plan was adopted, many changes have taken place in the river corridor, such as the removal of both the Happy Isles Bridge and the Cascade Dam. These actions are now part of the status quo and are reflected in the No Action baseline scenario presented in the Revised Merced River Plan/SEIS.

Alternative 2—VERP Program with Interim Limits

Concern 74: The Revised Merced River Plan should define permanent visitor limits to protect Outstandingly Remarkable Values, rather than wait for the Visitor Experience and Resource Protection process to define them.

"I believe that there should be, and perhaps these interim limits should actually be adopted as permanent in alternative two to curtail any activities under the VERP program."
(Conservation Organization, Twain Harte, CA, Comment #34-8)

"I am confused and frankly dismayed by your supposition that the interim facility limits in alternative 2 will be discarded once VERP is up and running. I don't think the Wild and Scenic Rivers Act had this strategy in mind, nor the National Parks and Recreation Act, nor the NPS national policies, nor the Federal Interagency Task Force on Visitor Capacity...I don't think the 2004 Court of Appeals ruling had this in mind, and thus it would be fitting to rename this alternative the Interim Judicial Compliance alternative. In my opinion, you are displaying arrogance and stubbornness towards federal public law, our court systems, and a disappointing level of intellect about the value of specifying visitor capacities as a management tool to preserve park resources, quality park experiences, and the Wild and Scenic River Outstandingly Remarkable Values."
(Individual, Fort Collins, CO, Comment #73-26)

"I am also wary of plans that say in x years we will reevaluate based on VERPS. Managers of the future will be endlessly swayed by politicians, the concessionaire, lawsuits, and narrow minded user groups. I think stick user numbers set up to last a decade is a safer route."
(Individual, Fresno, CA, Comment #78-2)

Response: The Final Revised Merced River Plan/SEIS has identified and evaluated a range of reasonable and feasible alternatives to address user capacity in Yosemite National Park based on the VERP framework. The VERP framework is a tool developed by the National Park Service to address user capacities and ensure the protection of natural and cultural resources and the visitor experience (Hoff and Lime 1997). VERP will allow the park to manage visitation based on resource/visitor experience conditions, with the overall goal of protecting and enhancing the river's Outstandingly Remarkable Values. However, as part of its October 2003 ruling, the court specified that some form of interim limits could be used while the VERP program is developed. The National Park Service chose to adopt a set of interim limits in the preferred alternative. The National Park Service may chose to continue some or all of these interim limits or chose new types of numeric limits even after VERP is fully developed.

Concern 101: The National Park Service should select Alternative 2 as the preferred alternative.

"We find Alternative 2 as the most desirable. This alternative presents the least restrictive method of providing a positive visitor experience while working to protect the remarkable natural and cultural resources of the area."
(Conservation Organization, Oakland, CA, Comment #69-1)

"On balance the AAC endorses the selection of Alternative 2 as the "Preferred Alternative" for management of the Merced Wild and Scenic River. We believe the VERP framework will be a useful long-term tool to manage human interactions in the Park, with the interim capacity limitations on facilities and trailhead quotas providing adequate protection for the natural resource until VERP has been sufficiently developed and tested. We believe this alternative will best protect the many scenic, historic, natural and recreational resources in the Park from inappropriate or excessive use."
(Non-Governmental Organization, San Rafael, CA, Comment #112-1)

"Alternative 2 is not an immediate and extreme change; yet, it should satisfy the desires of the Ninth Circuit. Climbers are willing to make necessary sacrifices to protect the environment and the Outstandingly Remarkable Values, but the Access Fund does not support a complete new policy between now and the implementation of VERP. The alternative will provide for the Merced River Valley to be administered in the same manner as it has traditionally been managed unless a problem arises. The Access Fund believes that the present condition of the valley should remain unless there is a need to change it; therefore, this alternative is the most desirable."
(Non-Governmental Organization, Mill Valley, CA, Comment #119-1)

Response: The National Park Service agrees with this concern. After full consideration of Section 101 of National Environmental Policy Act, Alternative 2 was determined to be the environmentally preferable alternative for the Revised Merced River Plan/SEIS. The National Park Service has therefore selected Alternative 2 as the park's environmentally preferable method of achieving the plan's goals.

Concern 102: The Revised Merced River Plan should provide limitations on use in Alternative 2 beyond the "Interim Facility Limits" in order to satisfy the Ninth Circuit Court's mandate.

"Although Alternative 2 is characterized as being the "Interim Facility Limits" alternative, I could find no commitment to any sense of limitation which would satisfy the Ninth Circuit Court mandate. In particular, it seems very strange that the supposed interim limits on overnight accommodations would involve larger numbers than at present. Logically, an interim limit would mean sticking with the present numbers, not increasing them with new construction."
(Individual, San Francisco, CA, Comment #31-8)

"Monitoring the actual impacts of visitors will provide base line data that can then be used to address impacts in ways which preserve the river values and visitor experience. However, because not all VERP indicators will be put in place immediately, the Council believes that facility limits must be strictly set at existing levels. Changes in facilities should be considered only after VERP monitoring is fully implemented."
(Conservation Organization, Mariposa, CA, Comment #107-4)

Response: The National Park Service has, and will continue to implement components of Yosemite National Park's User Capacity Management Program that provide limitations on use beyond the Interim Facility Limits. As described in Chapter II of the Final Revised Merced River Plan, the National Park Service currently manages for limits on the number of people (such as the Wilderness Trailhead Quota System), Limits on Facilities (such as campsites, lodging units, parking, and utility systems capacities), Limits on Specific Activities (such restrictions on rafting outlined in the Superintendent's Compendium), and Limits Based on Environmental/Experiential Conditions (such as redirecting traffic when levels reach capacity). Additionally, in Alternative 2, the Interim Facility Limits will limit use by keeping facilities at or near current levels.

Concern 122: The National Park Service should not select Alternative 2.

"Alternative 2, VERP Program with Interim Facility Limits, fails the test of putting in place a mechanism to prevent degradation of the resource before it occurs. Furthermore, if it (VERP) only measures human impact then it is inadequate because by definition impacts upon the resource must include new, temporary and pre-existing infrastructure. Moving humans around from one location to another or counting them as having less impact if they are in buildings, as if this would miraculously reduce impacts while ignoring the role of construction and expansion of existing facilities and infrastructure, is a bankrupt approach to resource protection and preservation. Not only that, but it might entail wasting a lot of taxpayer's money that could perhaps be put to better use elsewhere or at least not squandered so frivolously on stuff the incomparable Valley does not need more of."
(Individual, Fremont, CA, Comment #51-4)

"I AM AGAINST THE PROPOSED ACTION. I AM AGAINST VERP AND ANY REGULATION OF ACCESS TO THE MERCED RIVER."
(Individual, Comment #54-1)

Response: The Revised Merced River Plan/SEIS analyzed a range of reasonable and feasible alternatives that addressed the 2004 Court Order to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El

Portal Segment based on the location of Outstandingly Remarkable Values. Based on this comparative analysis, and given full consideration of Section 101 of National Environmental Policy Act, Alternative 2 was determined to be the environmentally preferable alternative for the Revised Merced River Plan/SEIS, and thus was selected as the park's preferred method of achieving the plan's goals.

Concern 211: The Revised Merced River Plan should be revised to add an annual visitation cap to Alternative 2.

"Alternative 2 is the preferred Plan but is still lacking the Annual Visitation Cap is a 24 hour period which ultimately effects the ecology in the valley, El Portal, and the river gorges (Merced and South Fork Drainages)."
(Tribal Organization, Mariposa, CA, Comment #84-2)

Response: Alternative 2 takes the VERP framework provided in the 2000 Merced River Plan and implements a VERP program with specific indicators and standards, along with a commitment to take management action as needed to keep conditions within the established standards. The standards, which are set at levels designed to protect and enhance the Outstandingly Remarkable Values, would provide a quantifiable and documented trigger for when action must be taken. If monitoring were to determine that conditions were approaching or exceeding a given standard, action would be taken to return conditions to the established standard. Because VERP monitoring is designed to identify specific causes of adverse impacts to resources or the visitor experience in specific areas, setting an annual corridorwide visitation limit may not mitigate direct impacts related to use as many impacts may be associated to visitor behaviors, rather than the number of visitors in an area. The management actions associated with VERP are flexible enough to target the root causes of unacceptable impacts. Further, one possible management action that could be implemented based on VERP monitoring is a visitor reservation system, which would function like a cap.

Concern 278: The Revised Merced River Plan should state how each alternative will achieve protection and enhancement of Outstandingly Remarkable Values.

"It is difficult to understand how the preferred alternative is any better than the user capacity "program" that the ninth circuit already held is invalid. The SEIS also fails to explain how the preferred alternative, or any of the alternatives, are developed based on protection and enhancement of the Outstandingly Remarkable Values. The plan must clearly state for each alternative how the alternatives will achieve protection and enhancement. it should be clearly and specifically stated."
(Conservation Organization, Yosemite, CA, Comment #111-65)

Response: In response to this concern, Chapter III (Alternatives) has been revised in the Final Revised Merced River Plan/SEIS to discuss how each alternative will protect and enhance Outstandingly Remarkable Values of the Merced Wild and Scenic River.

Concern 456: The National Park Service should adopt the user capacity program from Alternative 2.

"Alternative 2 best addresses the user capacity deficiency."
(Conservation Organization, Mariposa, CA, Comment #107-1)

"The preferred revised river plan alternative does not vary greatly from the "user capacity" approach adopted in the original river plan. We shared the NPS's belief that the original plan adopted a worthwhile and workable approach to this issue—particularly in the already controlled environment of a National Park."
(Conservation Organization, Sacramento, CA, Comment #116-10)

Response: The National Park Service agrees that the user capacity program from Alternative 2 best addresses the user capacity deficiency. After full consideration of Section 101 of National Environmental Policy Act, Alternative 2 was determined to be the environmentally preferable alternative for the Revised Merced River Plan/SEIS. The National Park Service has therefore selected Alternative 2 as the park's preferred method of achieving the plan's goals.

Alternative 3— VERP Program with Segment Limits

Concern 103: The National Park Service should select Alternative 3 as the preferred alternative.

"[F]or the long-term protection of the resources along this heavily-accessed area of the park, I support Alternative 3 allowing park management to limit day use of this area to the existing peak level. If visitor levels are already creating harmful impacts on both visitor experience and on natural resources, these negative impacts are only going to get worse unless a maximum daily quota for visitors entering the wilderness to reach Half Dome is established."
(Individual, Carmichael, CA, Comment #25-2)

"Use segment quotas... Visitation quotas for river segments, used in combination with the VERP program, would be the best way to protect the Merced and visitors' experience of it. Such quotas, stated and adhered to, would reduce the likelihood that the river's health will be neglected for political reasons."
(Individual, Comment #81-9)

"I support the User Capacity element of Alternative 3, as it seems it will better provide for resource protection and be more feasible to implement and administer, than the other alternatives."
(Individual, El Portal, CA, Comment #89-3)

Response: The Revised Merced River Plan/SEIS analyzed a range of reasonable and feasible alternatives that addressed the 2004 Court Order to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. While the user capacity program proposed under Alternative 3 protects and enhances river values it was determined that its measures would have more of an impact on visitor experience. Based on this comparative analysis, and given full consideration of Section 101 of National Environmental Policy Act, Alternative 2 was determined to be the environmentally preferable alternative for the Revised Merced River Plan/SEIS, and thus was selected as the park's preferred method of achieving the plan's goals.

Alternative 4— VERP Program with Management Zone Limits

Concern 104: The National Park Service should select Alternative 4 as the preferred alternative.

"Given the remaining three alternatives, I strongly support Alternative 4 (A4) -- especially over A2, the NPS Preferred Alternative. A4 would more than double the 3C area – allowing probably needed and effective administrative space -- while providing ONLY Discovery and Open Space access by visitors. A2 would more than quadruple administrative space with anticipated heavy impacts, and open up more than half of the managed Wild and Scenic River environment to Yosemite's fairly heavy day use and at least "moderate" resource degradation. A4 is likely to cost less than A2 or A3 to manage, and – within the context of sustainable use and resource protection – would put more value on protecting our great-grandchildren's access to environmental values equally with those of our own generation than would any other alternative. A4 (and, to a lesser extent, A3) would place more limits on user access and development than A2 – a price we must pay in order to sustain our resources so that future generations can have the equal access to those resources."
(Individual, Berkeley, CA, Comment #4-5)

"Based on the alternatives offered, Alternative 4 appears to provide the best protection for the resources in the El Portal Boundary. The projected gains in population and likely usage are a serious challenge: major protection now provides the option of flexibility later on, should the public need require it."
(Individual, San Francisco, CA, Comment #13-1)

"I'd also like to advocate for the fourth alternative, which is the most restrictive to development in El Portal so that the development that seems inevitable is focused on the smallest possible area of already impacted sites and the maximum amount of wetlands, open space, biological resources, is left unimpacted."
(Individual, El Portal, CA, Comment #35-2)

Response: The Revised Merced River Plan/SEIS analyzed a range of reasonable and feasible alternatives that addressed the 2004 Court Order to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. Based on this comparative analysis, and given full consideration of Section 101 of National Environmental Policy Act, Alternative 2 was determined to be the environmentally preferable alternative for the Revised Merced River Plan/SEIS, and thus was selected as the park's preferred method of achieving the plan's goals.

Concern 323: The National Park Service should select the user capacity element of Alternative 4.

"I prefer alternative 4 Management Zone Quotas with Visitor Experience and Resource Protection"
(Individual, Fresno, CA, Comment #128-2)

Response: The Revised Merced River Plan/SEIS analyzed a range of reasonable and feasible alternatives that addressed the 2004 Court Order to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. While the user capacity program proposed under Alternative 4 would protect and enhance river values, it would require more intensive management of visitor movement into and out of management zones and would result in greater impact to the visitor experience. Based on this comparative analysis, and given full consideration of Section 101 of National Environmental Policy Act, Alternative 2 was determined to be the environmentally preferable alternative for the Revised Merced River Plan/SEIS, and thus was selected as the park's preferred method of achieving the plan's goals.

Multiple Alternatives

Concern 58: The National Park Service should make it clear that the User Capacity Program and El Portal Boundary components of the alternatives are not linked.

"Make it clear that the alternatives for the two objectives (limits on use and El Portal corridor boundaries) are not linked. Our understanding from reading the Draft Merced Wild and Scenic River Management Plan was that the alternatives for the two objectives are linked - that is if alternative 2 is chosen for limits on use, alternative 2 also must to be chosen for the El Portal corridor boundaries. Based on our subsequent conversations with Park management staff, this does not appear to be the case (and we are glad that it is not). This point should be clarified."
(Conservation Organization, Twain Harte, CA, Comment #29-11)

"[W]hy are the alternatives for the two objectives, that is user capacity and the El Portal boundary, tied together? So there seem to be four alternatives for both objectives, and it seems to me that it would make more sense if the alternatives for these objectives were dealt with separately rather than together. I may be mistaken in the understanding, but that's what I got reading from the draft plan. Let me clarify that. I think we should be able to choose the alternatives for each objective separately rather than choosing an alternative that deals with both objectives at the same time."
(Twain Harte, CA, Comment #34-1)

Response: Although the two elements that make up the alternatives can be looked at somewhat independently, they are not completely independent of each other. For example, standards set for VERP program indicators may vary across different management zone prescriptions, as different desired conditions apply to different management zone. In addition, there are other elements within the user capacity alternatives, such as daily segment limits, management zone limits, and annual corridorwide visitation limits, which are directly related to desired condition. Specifically, Alternative 4 proposes additional Limits on Numbers of People by management zone which would require the National Park Service to manage visitor use according to the social density factors prescribed for each management zones. Because each El Portal boundary alternative examines a river corridor boundary with different management zone prescriptions, the user capacity alternatives would be affected by these differences. This issue has been clarified in the Final Revised Merced River Plan/SEIS at the beginning of Chapter III, Alternatives under a paragraph entitled "Relationship between the User Capacity and El Portal Boundary Elements."

Concern 60: The National Park Service should implement the User Capacity Management Program from Alternative 3, and the El Portal boundary from Alternative 2 or Alternative 4.

"CSERC finds that alternative 2 is the best choice to manage user capacities, and alternatives 3 or 4 best define the El Portal corridor boundaries. User capacities would best be managed under alternative 3, because, of the current alternatives, it best protects the Merced Wild and Scenic River Outstandingly Remarkable Values while also being most feasible for the Park to implement. Based on input from El Portal advocates and residents we find that alternatives 2 and 4 provide the best protection for the Merced Wild and Scenic River Outstandingly Remarkable Values while also allowing appropriate flexibility for the Park in locating its administrative facilities."
(Conservation Organization, Twain Harte, CA, Comment #29-12)

Response: The Revised Merced River Plan/SEIS analyzed a range of reasonable and feasible alternatives that addressed the 2004 Court Order to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. Based on this comparative analysis, and given full consideration of Section 101 of National Environmental Policy Act, Alternative 2 was determined to be the environmentally preferable alternative for the Revised Merced River Plan/SEIS based on its furtherance of the National Environmental Policy Act goals as described in Chapter III.

Concern 167: The National Park Service should recognize that implementation of Alternatives 1, 3, and 4 are infeasible.

"In fact, the Draft SEIS itself says monitoring of visitor use of the river corridor on a segment by segment basis, or on a management zone basis is infeasible. For Alternative 3, the SEIS (page II-61 para 2) states: "For this reason, it is infeasible to try to manage visitor levels strictly within the river segments separately from the larger developed areas." Regarding Alternative 4, the Draft SEIS (page II-69 para 5) states:"...effective real-time monitoring and management of visitor levels per management zone would be very difficult and would require a substantial investment in infrastructure and personnel."
(Individual, Fresno, CA, Comment #82-3)

"LACK OF FEASIBLE ALTERNATIVES: NEPA requires that a range of feasible alternatives be presented. In the present process, Alternative 1 is not feasible because of the court mandates. But Alternatives 3 and 4 also appear to be infeasible because of the excessive levels of staffing (funding) required to implement them. So there is a still further violation of NEPA."
(Conservation Organization, Fresno, CA, Comment #113-7)

"[T]he notion of user quotas for each management zone, as well as for the river corridor as a whole, seems unworkable— [and more staff-intensive] at least outside of the already established wilderness user quotas, campground restrictions, and limiting automobile entry to Yosemite Valley when parking spaces are filled in the Valley."
(Conservation Organization, Sacramento, CA, Comment #116-11)

Response: Park management staff has determined that Alternatives 2, 3, and 4 as presented in this document are all. However, each alternative has various constraints and complexities with regard to implementation, as documented in the environmental analyses (Chapter V), particularly with regard to the visitor experience and park operations.

Concern 241: The Revised Merced River Plan should include the 5-year VERP analysis in Alternatives 2, 3, and 4.

"I feel the 5 yr V.E.R.P. analysis should be included with alternative 2, 3, & 4."
(Individual, Mariposa, CA, Comment #87-7)

Response: The Revised Merced River Plan/SEIS includes the VERP program as a component of Alternatives 2, 3, and 4. The interim period included as part of Alternative 2 is intended to ensure that the VERP standards and indicators are functioning, and that monitoring efforts are effective prior to lifting the interim limits on use. As a science-based approach, some VERP indicators could require several seasons of testing to verify their effectiveness before they are used to inform management decisions. However, this does not preclude park mangers from implementing management actions in response to VERP monitoring during the first 5 years. Efforts already underway by National Park Service staff to test the indicators and standards are providing good data on existing conditions. The premise behind VERP is *informed action* because once a problem has been identified, VERP allows for a timely assessment in order to determine the root cause and identify appropriate management action(s) to remedy the situation. Thus, park managers would not wait for five years to act if information gathered before then indicates a need for management action to ensure that the Merced River's Outstandingly Remarkable Values are being protected and enhanced.

Concern 400: The National Park Service should recognize that Alternatives 3 and 4 prescribe drastic changes and limit people's access beyond what is necessary.

"Alternative 3 proposes quotas for four different segments in the Merced River Valley. These segments are: Wilderness, Yosemite Valley, El Portal, and Wawona. This proposal is a much different change in the status quo as compared to Alternative 2. The Access Fund does not believe such drastic changes are necessary at this point. The sharp changes include a strict corridor quota of 5 million people a year and individual segment quotas. Furthermore, within the wilderness segment, an 800 person quota for Half Dome is proposed. There is no need to limit climbing use in wilderness areas as climbers use distinctly different areas of this segment as compared to the typical hiker/sightseer. Although there are concerns with Alternative 3 the Access Fund agrees with certain portions as well. Also, it does not suggest the raising of fees or the requirement of permits."
(Non-Governmental Organization, Mill Valley, CA, Comment #119-5)

"Alternative 4 provides a monitoring system focused on the number of people per acre in a management zone. It too provides for a maximum corridor quota of 5.3 million people per year. This alternative provides for more variables within each segment. It splits segments into sub-areas; some with high capacities and some with lower capacities. This alternative splits the park management into management zones. The administration of these separate zones is similar to Alternative 3. The negatives of Alternative 4 mirror Alternative 3."
(Non-Governmental Organization, Mill Valley, CA, Comment #119-6)

Response: The action alternatives identified in this Revised Merced River Plan/SEIS have been developed to satisfy the 2004 Court Order requiring the National Park Service to revise the original Merced River Plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. The alternatives identified and evaluated in this document have been developed as a means to achieve this directive, and are compliant with the requirements of Wild and Scenic Rivers Act and relevant National Park Service management policies and procedures. Based on this comparative analysis, and given full consideration of Section 101 of National Environmental Policy Act, Alternative 2 was determined to be the environmentally preferable alternative for the Revised Merced River Plan/SEIS. The analysis contained in Chapter V weighs the potential effects of each user capacity element on the visitor experience.

Other Alternatives

Concern 277: The National Park Service should consider an alternative that reduces facilities along the Merced River to essential facilities only.

"In order to comply with both WSRA and NEPA (National Environmental Policy Act), NPS should consider an alternative that reduces the facilities along the Merced River to essential facilities only, such as bathrooms, necessary emergency facilities, drinking fountains where drinking water pipes already exist, some limited food availability such as groceries, tent cabins or camping, in order to allow for visitor use with ORV protection. This alternative would also allow (facilitate?) for less employee housing in both Yosemite Valley, El Portal, and Wawona."
(Conservation Organization, Yosemite, CA, Comment #111-62)

"The D. R. MPR has no alternative that provides for reducing facilities in order to protect and enhance Outstandingly Remarkable Values. Instead every alternative seems to be based on both existing and proposed facilities."
(Conservation Organization, Yosemite, CA, Comment #111-64)

Response: The Final Revised Merced River Plan/SEIS is a programmatic document that prescribes, among other elements, management zoning to determine the types of facilities that could be placed in a specific area. It also establishes a user capacity program that determines a limit on the amount and type of uses within the Merced River corridor. The Final Revised Merced River Plan/SEIS does not prescribe specific actions, such as the placement or removal of facilities; rather it prescribes a framework for future decision making. The management zoning, user capacity methods, and other elements of the Merced River Plan are flexible enough to allow for reductions in the number of facilities within the river corridor, should such reductions be indicated based on information gathered through VERP monitoring. However, reductions or modifications to specific facilities would be addressed in implementation level plans which tier of the Merced River Plan.

Alternatives Not Considered in the Planning Document

Concern 105: The Revised Merced River Plan preferred alternative should discuss options for addressing impacts other than re-directing people to other areas of the park and transferring impacts to other areas.

"There are a number of suggestions in the Management Action Toolbox to deal with park overcrowding including a day use reservation system and redirecting visitors to other areas of the park. The draft plan does not explain how the visitor experience will be maintained through these suggested alternatives."
(Conservation Organization, Oakland, CA, Comment #69-8)

"Removing certain development and restricting activities in the river corridor and forcing some to other Valley areas at the expense of other remarkable resources could present problems."
(Conservation Organization, Oakland, CA, Comment #75-6)

"Alternative 2 (at least as explained in the Fact Sheets) calls for unlimited access into the Park. It proposes to deal with the ensuing large numbers of vehicles and people by redirecting them away from the areas they had intended to visit, and into other areas of the Park. We question whether this management action would be acceptable to the visitor."
(Conservation Organization, Fresno, CA, Comment #113-9)

Response: Alternative 2—the National Park Service's preferred alternative—includes the implementation of VERP as one component of the user capacity management program. Although redirection of people from areas being impacted by visitor use is one valid action that could be implemented to address impacts, it is not the only potential action. An action taken in one situation or in one area of the park may not be effective in another. Also, as conditions change, as technology changes, and as visitor use patterns change, management strategies must change accordingly. As described in the discussion of management actions in Chapter II of the Final Revised Merced River Plan/SEIS, there is a range of potential actions that could be implemented if conditions warrant management action is needed. A list of potential actions is also presented in the table that presents the indicators and standards included as a part of the VERP program.

As a result of this public concern, changes in the Final Revised Merced River Plan/SEIS have been made to the Environmental Consequences (Chapter V) in each of the sections that impacts associated with redirecting use would affect. Redirecting visitor use to other areas outside of the Merced River corridor would be one type of management action the National Park Service could implement if resource conditions or the visitor experience was exceeding set standards. Impacts associated with redirecting use could be considered adverse or beneficial depending on the impact topic. However, redirection of visitor use is expected only to occur for a short period of time at site-specific locations or during peak visitation periods during the summer and on major holiday weekends. For a discussion of impacts associated with redirecting use, see Chapter V.

Concern 107: The National Park Service should consider an alternative with an annual visitation cap less than current levels.

"It's not about the river, it's about people, and people equate to revenue. It's all about revenue. You will deny it, but you will never convince me that this is not what it's all about. If it were not true, you would have suggested capping visitation at lower levels, not higher levels. Where is alternative number five, where visitation would be capped at three million per year?

If it were me, I'd cap Yosemite's annual visitation at 2.5 million per year and be willing and happy to be one of the ones willing to take a number just to get in once in a while to see the park's majesty, so that Yosemite Valley and surrounding environs could heal themselves, rather than require the aid of solicited funds from the likes of the Yosemite Fund."
(Individual, Truckee, CA, Comment #5-4)

"Set a visitation cap for the river corridor at 4 million or below. At Yosemite's current annual visitation rate of 3.5 to 4 million, the Merced's banks are worn bare at the most popular beaches and meadows. Many people choose not to enter Yosemite Valley, especially in summer, because of the crowds. Capping visitation is an excellent idea, but the current plan's cap of 5.3 million will mean further degradation of the river and of visitor experience. Lowering the cap will be potentially difficult politically. However, it could be proactively explained as a way to safeguard visitors' experience in Yosemite while protecting the Merced."
(Individual, Comment #81-3)

Response: In response to this public comment, the Final Revised Merced River Plan/SEIS has proposed a reduction in the annual corridorwide visitation limit in Alternative 4 from 5.3 million to 3.27 million. This annual corridorwide visitation limit is based on the annual visitation the park received in 1987, which is the year the Merced River was designated as Wild and Scenic.

Concern 181: The Revised Merced River Plan should not set an annual visitation cap of 5.3 million which is larger than the park has ever experienced.

"It makes no sense to set the maximum annual cap at 5.3 million visitors (as was proposed in Alts. 3 and 4), which is much larger than the park has ever experienced."
(Individual, Fresno, CA, Comment #82-20)

"Given the fact that user cap for three and four, and I assume will might be a cap for alternative 5.3 million would be an increase over what is now the experience in the park."
(Individual, Merced, CA, Comment #98-3)

Response: Alternative 3 in the Final Revised Merced River Plan/SEIS proposes a 5.32 million annual corridorwide visitation limit provided that the VERP program indicates that the Outstandingly Remarkable Values are being adequately protected. Implementation of the VERP program could result in annual visitation levels being lower or higher than this proposed annual limit. In Alternative 4, the annual corridorwide visitation limit has been reduced to 3.27 million visitors in response to public comment on the Draft Revised Merced River Plan/SEIS. This limit is based on the annual visitation in 1987, the year the Merced River was designated as Wild and Scenic.

Alternatives Considered but Dismissed

Concern 168: The National Park Service should reconsider an alternative that was "considered but dismissed from further analysis" that proposed a corridorwide daily quota with VERP.

"The NPS should fully analyze the alternative that was "considered but dismissed from further analysis" that proposed a corridor-wide daily quota with VERP (p. II-74)... It is not valid simply to state that such an alternative "was not carried forward because there are similar alternatives that achieve the same effect with more environmental benefits." This reader is not convinced."
(Individual, Fresno, CA, Comment #82-5)

Response: The goal of this alternative would be to set a specific daily visitor limit for the river's entire 81-mile corridor within national Park Service jurisdiction. Although a number could theoretically be identified for the entire corridor by adding up the limits for each segment by using the 1980 *General Management Plan* visitor capacity goals, this number would not be relevant to the protection and enhancement of the river's Outstandingly Remarkable Values. Various segments of the river corridor are suitable for different intensities of visitor use. Based on the facilities available, the resources present within the segment, the sensitivity of the resources to visitor experience conditions, park managers would not have the best information on whether the level of visitor use was adversely impacting the Outstandingly Remarkable Values (Hof and Lime 1997). An aggregate figure would also mask problems at hot spots and would not provide managers with useful guidance for addressing use-related problems. The use of a corridorwide limit, when combined with a VERP monitoring program, would still not provide the management benefits associated with limits by segment.

A corridorwide limit without VERP was rejected prior to full analysis in this SEIS because it would not meet the purpose and need of providing a user capacity system that allows for effective protection and enhancement of the Outstandingly Remarkable Values. A corridorwide daily limit with VERP was not carried forward because there are other similar alternatives that achieve the same effect with more environmental benefits.

New Alternatives

Concern 220: The National Park Service should consider a new alternative called "ORV Protection and Walk Lightly and Enhance Enjoyment Alternative."

ALTERNATIVE NOT CONSIDERED: The ORV Protection and Walk Lightly and Enhance Enjoyment Alternative (this is a sketch)

This alternative will be developed through open public meetings, dialogues, and discussions and counsels with related Native American tribes and individuals, Yosemite lovers from all over, biologists, ecologists, historians, naturalists, hydrologists, wetlands experts, ethnologists, and so on, will be invited. No mitigation of destruction or degradation of Outstandingly Remarkable Values for development projects will be permitted. No votes will be taken. Dialogues and exchanges of experiences and goals for our children and grandchildren's experience of the Merced River's Outstandingly Remarkable Values will be developed that will be followed in the development of the plan. The standard will be that of the Great Law of the Iroquois Confederacy, "In our every deliberation, we must consider the impact of our decisions on the next seven generations."

** Based on the Outstandingly Remarkable Values of the Merced River in Yosemite National Park and in the El Portal District.*

** Based on the 1982 Federal Guidelines.*

** Based on the user capacity definition in the 1982 Federal Guidelines.*

The Wild and Scenic Rivers Interagency Guidelines (1982), defines user capacity as: "the quantity of recreation use which an area can sustain without adverse impact on the outstandingly remarkable values and free-flowing character of the river area, the quality of recreation experience, and public health and safety."

As stated in Section 10(a) of the Wild and Scenic Rivers Act (WSRA), the "primary emphasis shall be given to protecting [the River's] esthetic, scenic, historic, archaeologic, and scientific features." The Federal Guidelines go on to state that "each component will be managed to protect and enhance the values for which the river was designated, while providing for public recreation and resource uses which do not adversely impact or degrade those values." This is referred to as the nondegradation standard. WSRA then provides examples of possible River values such as scenery, recreation, fish and wildlife, geology, history, culture, and other similar values -- but the primary emphasis still rests with the esthetic, scenic, historic, archaeologic, and scientific features.

Document Baseline Resource Conditions and Monitoring Program: A recent (2002) technical assistance paper published by the Wild and Scenic Rivers Interagency Commission states as a management directive: "To achieve a nondegradation standard, the river-administering agency must document baseline resource conditions and monitor changes to these conditions." (Natural Resource Challenge Action Plan, 1999) Such a scientific base of information will locate and document the Merced River's Outstandingly Remarkable Values as well as the systems upon which they depend; the condition of those resources; any changes in condition over time; and actions needed to ensure preservation.

An aggressive Inventory and Monitoring Program will be developed and put in place first to provide information critical to the developing user capacity and the planning process.

An ecological restoration report was released by the Park in June of 2003 which included details of a workshop held in November of 2002. Some very honest random comments by workshop participants included:

"Have monitoring plan in place before start of restoration: 1. Need adequate baseline information; a) Monitor migration of in-stream woody material; b) Soil compaction bulk density measurements"

"S• park should collect reference data on existing conditions now for Tenaya and Merced, so have reference for future monitoring. Work on Tenaya Creek should be performed within first five years of project, so work can progress from upstream through downstream areas."

"S• noted that she doesn't feel it's possible to restore Valley to pre-Euro American contact because of the extent to which the landscape has changed"

"Don't want to keep doing what we've been doing just in case we are going on the wrong path"

"Experiment with small plots in every area. Monitor over 1 year and then proceed with area that does best"

Such comments clearly imply that baseline information on condition of resources as well as a monitoring program are lacking now and thus will be developed.

At a Yosemite meeting last year, Chief of Natural Resources and Science Dr. Niki Nicholas revealed that the reason these studies were so important was that the park has "no baseline information;" that in order to proceed with restoration, her staff needs "a place to start." We applaud Dr. Nicholas' honesty and her efforts to begin the process of gathering baseline data.

Yosemite National Park will apply the nondegradation standard mandated in WSRA.

Outstandingly Remarkable Values: These are the basis of this Alternative. The foundation of this Alternative is the protection of the Outstandingly Remarkable Values. The Outstandingly Remarkable Values will be identified as to what, where, when, and how. The systems that each ORV depend on for their existence, health, and continuance will be identified. Clear and understandable Indicators and Standards for each ORV will be identified. The Outstandingly Remarkable Values will be adequately monitored and a report of their condition will be put out to the public each year from the appropriate scientists, historians and experts in the field. A user capacity will be determined based on protection of the Outstandingly Remarkable Values with the primary emphasis for protection given to protecting the River's esthetic, scenic, historic, archaeologic, and scientific features."

Under this Alternative, all plans and projects in place, ongoing, and planned for the future in the Yosemite Valley Plan and dependent upon or related to the Outstandingly Remarkable Values including the systems they depend upon (such as the larger ecological context and the streams, waterfalls, tributaries, and meadows that feed into them or that they feed into), and/or the Merced River will be immediately halted as they were not developed under a valid MRP and user capacity under the 1982 definition has not yet been determined. Recognizing the importance of Outstandingly Remarkable Values, the WSRA Interagency Commission (2002) provided another management directive: "Thoroughly define the Outstandingly Remarkable Values to guide future management actions and to serve as the baseline for monitoring."

Maps: This Alternative will include maps of the locations of all the Outstandingly Remarkable Values so far identified, the seasons they are located in Yosemite and El Portal and where, all Fed, State, and Park T & E & SC & rare Park species, and all other ORV species, all the systems (ecological, hydrological, geological, etc) that they are dependent upon for their continuing existence and health, a wetland map which will be updated every three years, a meadow map, the habitat for T & E & SC & rare Park species that have been extripated from the Park (but could one day be restored such as red legged frog -- not merely the areas identified as critical habitat by USFW, but also areas that are still viable habitat that exist in Yosemite and El Portal), scenic view Outstandingly Remarkable Values from the river and looking at the river, geological Outstandingly Remarkable Values, etc.

In addition, a discussion of aesthetic considerations will be included, with the understanding that no human made structure can improve on a natural landscape; and that modern human made structures always have the potential to further distance humans from their connection with the natural environment, no matter how esthetically pleasing they may be in themselves. All this, of course, will be as appropriate to each ORV and will be incorporated as ORV standards.

Types of and Nature of Visitor Enjoyment and Use: According to the 1982 WSRA Guidelines, management plans must state the kinds and amounts of public use which the river area can sustain without impact to the values for which it was designated. This plan will do so. And though specific management strategies will vary according to classification they will always be designed to protect and enhance the values of the river area. The very definition of user capacity mandates no adverse impact on the Outstandingly Remarkable Values no matter what the classification.

The types and visitor use will be related to the natural and cultural (in historic and native american terms, not the new YNP definition). That use will allow for low key, quiet experiences, which are the most powerful. This alternative will not rob visitors of their heritage or legacy for some superficial distraction concession. This alternative will protect the heritage and legacy of the Merced River's natural value Outstandingly Remarkable Values.

This alternative could allow more use as it would be based on Native American traditional gathering areas and materials will be respected and preserved. Native American gravesites will not be touched and will be treated with dignity -- no bathrooms will be built on top of them, no sewage pipes or other utilities will be run through them.

No concession amenity that does not already exist, and/or that was put in under invalid planning since 1990, will not be allowed.

For profit raft rental facilities, RV hook-ups along the river corridor, would not be allowed under this Alternative, as they degrade Outstandingly Remarkable Values. Individual's bringing their own rafts, would probably not, as concessionare rafting involves large amounts of disbarking and embarking at the same place at the same time and involves concession vehicles picking up and dropping of rafters in locations that disturbs the quiet enjoyment of other visitors eg at Sentinel Beach.

The Native American perspective of cultural resources contrasts with the generalized EuroAmerican view as presented by state/federal law and pursued in academia (adapted from SOR, 1995). The Native American perspective is characterized by a broad, holistic view which treats virtually all elements and features of nature as cultural resources; while the EuroAmerican perspective defines cultural resources as finite, unique, non-renewable examples of past human lifestyles, emphasizing scientific identification and evaluation of physical sites and artifacts (USACE, 1996). In determining Outstandingly Remarkable Values and their protection, this perspective will be weighted heavily.

Impacts of new construction, new visitor facilities, restoration of facilities, new areas of pavement or bulldozing, and the definition of "maintenance" will be carefully studied for their potential present and future impacts to Outstandingly Remarkable Values. No new impacts to Outstandingly Remarkable Values will be allowed. There is much that can be done in terms of necessary maintenance and restoration without impacts to Outstandingly Remarkable Values and that is the mandate of the WSRA.

The El Portal area's Outstandingly Remarkable Values and systems upon which they depend for their continuing existence in their present extent and conditions will be carefully surveyed, studied and mapped in order to identify and protect them, not in order to document their destruction so new development can take place."
(Conservation Organization, Yosemite, CA, Comment #111-71)

Response: The user capacity element of each of the action alternatives considered in this document provides for similar levels of environmental protection that meet the criteria outlined in the Wild and Scenic Rivers Act and the 1982 Secretarial Guidelines. In addition, the El Portal boundary element of each of the action alternatives all meet the requirements of the Wild and Scenic Rivers Act to protect and enhance the Outstandingly Remarkable Values of the Merced River in this segment.

As such, the National Park Service agrees with several of the issues raised by the commenter in this concern, and has incorporated many of them into the development of alternatives evaluated and analyzed in this document. For example:

- An open public process was central to the development of the alternatives considered in both the Draft and Final Revised Merced River Plan/SEIS. As discussed in Chapter VI of the document, the National Park Service conducted an intensive public involvement program that included direct consultation with American Indian groups and gateway communities. This effort began with a public scoping process and will continue through to the issuance of the Record of Decision.

- Each of the action alternatives carried forward for analysis in this document provides a user capacity program that will protect and enhance the Outstandingly Remarkable Values of the Merced River in a manner consistent with the requirements of the Wild and Scenic Rivers Act and the 1982 Secretarial Guidelines, including adherence to the non-degradation standard called for under the Wild and Scenic Rivers Act.

- The Revised Merced River Plan/SEIS has been developed using relevant and available data from many natural, cultural, social, and other studies, which serve as baseline information. These studies are referenced in the plan, can be found in the bibliography, and are available upon request. The National Park Service has begun collecting additional baseline data and is conducting resource monitoring associated with the park's VERP program. This information will supplement the existing data and information and will further support the park's VERP program in a manner that is consistent with the Wild and Scenic Rivers Act's protection and enhancement mandate. The National Park Service considers this information and data to be fully sufficient from which to determine if previously approved or future actions will or will not affect the Merced River's Outstandingly Remarkable Values.

- The VERP program has developed and incorporated a specific indicator and measurable standard related the number of people recreating on the river (which includes both concessioner and private rafting) that will address crowding and serve to protect the health of the river, particularly in Yosemite Valley.

- The user capacity program does not restrict American Indians who are culturally associated with the lands in Yosemite National Park and/or the El Portal Administrative Site and who access lands to gather traditional resources and conduct traditional cultural practices for the purposes of retaining their cultural heritage. In addition, the VERP program also has developed and incorporated a specific indicator and measurable standard focused on extent/magnitude of three traditionally used plant species that will reflect the health of traditionally used resources and help protect cultural and biological ORVs.

- In response to public comment, Alternative 2 - the environmentally preferable alternative, identified the Draft Revised Merced Rive Plan/SEIS has been revised in the Final Revised Merced River Plan/SEIS as it relates to the corridor boundary and management zone prescriptions for the El Portal segment. In this segment, the National Park has adopted a quarter-mile boundary on either side of the river with more protective management zone prescriptions.

Over the course of a large project such as this, the park receives a wide range of public comments that reflect a wide range of issues, ideas and opinions. The park's planning team considers all of them during the public involvement process, as the park determines the most appropriate balance between resource protection and visitor experience for the Merced River corridor in a manner consistent with the Wild and Scenic Rivers Act.

Cumulative Effects Analysis

Concern 152: The Revised Merced River Plan should be revised to more rigorously analyze the cumulative impacts of numerous Yosemite Valley Plan and related projects within the Merced River corridor.

"The cumulative impacts need more rigorous collective analysis. California Environmental Quality (CEQ) regulations define a cumulative impact as the impact on the environment which results from incremental impact of the action when added to (emphasis added) other past, present and reasonably foreseeable futures. CEQ also refers to "collective" analysis. The purpose of this requirement is for the decision maker and public to consider the collective effects of foreseeable multiple events. In the Environmental Consequences and in Appendix F of the SEIS, you list independently each foreseeable project and discuss their impacts...There is no presentation and rigorous analyses of the collective effects of the projects you list. You provide individual description but no collective synthesis or analysis."
(Individual, Fort Collins, CO, Comment #73-31)

"It is also unfortunate and I believe illegal that NPS does not disclose adequately, or oftentimes at all, the significant and cumulative impacts of the National Park Service projects that have already taken place, are taking place, and are planned to take place. The Yosemite Valley Plan is filled with such projects. (See D. R. MRP, Appendix F)"
(Individual, Comment #93-10)

"Cumulative Impacts are not adequately disclosed: NEPA requires a thorough discussion of the impacts of projects which will, measured together, have a cumulative effect on the Merced River corridor The D. R. MPR is woefully inadequate in its disclosure of cumulative impacts of past, present and future projects on the Merced River Corridor's Outstandingly Remarkable Values and River processes. The following is not intended as an exhaustive list of our concerns and objection. Rather we offer them to illustrate what we find to be, overall, a complete failure of the document to adequately disclose cumulative impacts."
(Conservation Organization, Yosemite, CA, Comment #111-18)

Response: The Council on Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) defines cumulative effects as "the impact on the environment which results from the incremental impact of the *action* when added to other past, present and foreseeable actions.

Methods and procedures the park follows for addressing cumulative impacts are found in the 1997 publication by the CEQ entitled "Considering Cumulative Effects under the National Environmental Policy Act." This Final Revised Merced River Plan/SEIS includes a description of cumulative actions in Appendix E. Chapter V: Environmental Consequences presents a discussion of the synergistic effects of those cumulative actions presented in Appendix E, with each of the effects of each action alternative proposed in the Final Revised Merced River Plan/SEIS.

Concern 270: The National Park Service should disclose how many "no significant impacts" add up to a cumulative effect.

"Viewed this plan, the Valley Plan or other plans disclose or admit significant impact, for example appendix F. Impact that's have already degraded and impacts that will degrade. How many no significant impacts, after no significant impacts, finally add up to cumulative impacts? I'd like the park service to address this."
(Individual, Cupertino, CA, Comment #103-4)

"Neither this plan, the YVP, nor other Yosemite National Park plans disclose or admit significant impacts (e.g. Appendix F) -- impacts that have already degraded and/or impacts that will. How many "no significant impacts" after "no significant impacts" finally add up to cumulative impacts? Do they ever, if they take place in Yosemite National Park-- well, it appears not on paper -- but there is the world of feather and leaf, and in the world of feather and leaf they do. The NPS is ignoring these significant and cumulative impacts, but this does not make them go away."
(Conservation Organization, Yosemite, CA, Comment #111-50)

Response: The National Park Service defines a detailed set of methods and procedures for determining the significance of an impact in terms of its context, intensity, duration, and type associated with projects requiring an Environmental Assessment or Environmental Impact Statement. These methods are consistent with the requirements of the Council on Environmental

Quality's (CEQ) guidelines and National Park Service Director's Order #12. The methods and procedures for determining impacts can be found at the beginning of the Chapter V, Environmental Consequences. This methodology is then used by technical specialists in the analysis of environmental impacts. Methods and procedures the park follows for addressing cumulative impacts are found in the 1997 publication by the CEQ entitled "Considering Cumulative Effects Under the National Environmental Policy Act."

Concern 284: The National Park Service should avoid adverse impacts even when paired with beneficial impacts to show a "net gain."

"While the NPS has disclosed some adverse impacts (although not all of them, nor the true extent of them), in the YVP, the text presents them alongside "beneficial" impacts to show a "net" gain. There are no tradeoffs or mitigation in protecting Outstandingly Remarkable Values and the systems upon which the Outstandingly Remarkable Values depend. NPS tries to claim a "net" gain as being positive and hence claim no impairment under their convoluted rules."
(Conservation Organization, Yosemite, CA, Comment #111-114)

Response: For any large program, particularly one multi-faceted as presented in this document, there are always elements that result in varying impacts. The park exercises its professional judgement when identifying the overall impacts of a proposed action.

Concern 153: The Revised Merced River Plan should include increasing recreation visitation as a reasonably foreseeable event in the cumulative impacts discussion.

"The most significant foreseeable event within the plan's time frame is increasing recreation visitation. Assuming a 4% increase in annual visitation, you will go from 3.6 million visitors in 2003 to 5.5 million visitors in ten years. My point is that increasing recreation demand is a future action that should be considered in your analysis of cumulative impacts."
(Individual, Fort Collins, CO, Comment #73-32)

Response: The document discusses Visitor Populations in Chapter IV, Affected Environment. Included are sections devoted to visitor population characteristics, visitor trip characteristics, park visitation trends, length of stay, and regional lodging characteristics. The Final Revised Merced River Plan/SEIS also analyzes visitor population trends in Chapter V, including possible visitation increases that could occur under some alternatives. Although park attendance has generally declined since the mid-1990s (see Chapter II), park attendance could increases in the future under some alternatives. The flexibility inherent in the design of the VERP element along with other elements of the park's overall user capacity management program will help to ensure that the Merced River's Outstandingly Remarkable Values will be protected and enhanced in the future.

Park Resources

Concern 108: The National Park Service should protect air, water, soil, and lower noise levels by prohibiting less motorized traffic and limiting noisy and unclean watercrafts.

"We need to keep our parks' air and water & soil clean and lower the noise levels: i.e., less motorized traffic, limiting crafts to clean crafts, not noisy crafts, etc."
(Individual, Comment #6-1)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Park regulations prohibit the use of motorized watercraft (such as boats with motors) on the Merced River, as only rafts and other flotation devises are permitted float specifies sections of the Merced River.

Concern 109: The National Park Service should protect resources and provide for appropriate land uses.

"[P]lease: Protect and enhance river-related natural resources, including channels, floodplains, alluvial fans, meadows, wetlands, and water quality. Protect and restore natural hydrological, geomorphic, and geologic processes. Provide appropriate land uses, keeping natural systems paramount (this should include biologic systems)."
(Individual, Sanger, CA, Comment #46-1)

Response: This comment is very much in keeping not only with the goals of this planning effort, but the overarching goals of the National Park Service. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Yet together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 110: The National Park Service should continue to burn the Valley's meadows.

"[F]redrick [Law Olmsted] didn't approve of the Indian's burning of the valley's meadows, and I would."
(Individual, Truckee, CA, Comment #26-8)

Response: Prescribed burning programs in Yosemite National Park are included as part of the *Yosemite Fire Management Plan*. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, prescribed burning of Valley meadows is not within the scope of this document.

Concern 124: The National Park Service should fix Northside Drive and build a pedestrian zone that allows for drainage from the black oak woodland to the meadow.

"Fix the road-now-turned-bike path [Northside Drive] to allow drainage from the black oak woodland to the meadow, strengthening both."
(Individual, Oakdale, CA, Comment #59-3)

Response: This issue of repairing drainage along Yosemite Valley roads will be part of an upcoming planning effort known as the "Rehabilitation of the Yosemite Valley Loop Road." Following completion of an Environmental Assessment and the subsequent publication of a Finding of No Significant Impact (if applicable) for this effort, the project is anticipated to begin in 2006. This concern has been forwarded to the park's planning team assigned to this proposed project. Based on the above, this concern is not within the scope of this document.

Concern 330: The National Park Service should increase resource protection enforcement during peak visitation at the most popular areas.

"Increased enforcement especially during peak visitation and the most popular areas is a must – regarding feeding wildlife, meadow trampling, garbage, etc."
(Individual, Fresno, CA, Comment #128-9)

Response: Protecting Yosemite's natural and cultural resources is a part of the daily operation of the park. During peak periods, staffing is increased to further fulfill this mission. For example, in summer, wildlife management crews conduct nightly patrols in campgrounds and parking areas in order to educate visitors regarding proper food storage regulations. As part of the VERP program presented in this document, staff will monitor impacts related to visitors interaction with wildlife, trampling of meadows, and other impacts. As a result, management actions can be taken to address these impacts.

Conflicts Between Resources

Concern 111: The Revised Merced River Plan should place priority of resource protection over visitor experience.

"When a quality visitor experience conflicts with a significant resource protection issue there should be only one outcome, resource protection wins."
(Individual, El Dorado Hills, CA, Comment #27-13)

"With all due respect, VERP has it backwards. Resource Protection has to come first. If resources deteriorate, then attempting to monitor Visitor Experience becomes increasingly silly. When resources (the independent variable) dwindle to mere shadows of their former selves, visitor experience (a dependent variable) necessarily follows."
(Individual, Emerald City, CA, Comment #85-2)

Response: The National Park Service administers Yosemite National Park under a series of statutory authorities passed in the late 1800s and early 1900s that include the National Park Service Organic Act of 1916. These authorities mandate that the National Park Service protect and preserve the park's natural and cultural resources while providing for the public's enjoyment of the resources "in such a means as will leave them unimpaired for the enjoyment of future generations." The mission of the National Park Service calls for allowing public use of parks, but not to the detriment of the values that make them unique. Similarly, the Wild and Scenic Rivers Act Section 10(a) calls for protection and enhancement of river values without limiting other uses to the extent that such uses do not adversely impact the values for which the river was designated.

Concern 297: The Revised Merced River Plan should strike a balance between resource protection and a positive visitor experience in Yosemite National Park.

"Plan Deficiencies Resource protection must be balanced with a positive visitor experience in Yosemite National Park. Environmental, cultural, historical, and economic resources must be considered for protection as well as the Outstandingly Remarkable Values of the Merced River."
(Federal Agency, Washington, DC, Comment #136-5)

Response: The National Park Service administers Yosemite National Park under a series of statutory authorities passed in the late 1800s and early 1900s that include the National Park Service Organic Act of 1916. These authorities mandate that the National Park Service protect and preserve the park's natural and cultural resources while providing for the public's enjoyment of the resources "in such a means as will leave them unimpaired for the enjoyment of future generations." The mission of the National Park Service calls for allowing public use of parks, but not to the detriment of the values that make them unique. Similarly, the Wild and Scenic Rivers Act Section 10(a) calls for protection and enhancement of river values without limiting other uses to the extent that such uses do not adversely impact the values for which the river was designated.

Ecosystem Processes

Concern 462: The National Park Service should consider new information in the Sierra Nevada Ecosystem Project Report about the biological importance of the El Portal area.

"[T]he El Portal portion of the Merced Wild and Scenic River corridor is more important biologically than understood years ago. See the 1996 SNEP Report… In El Portal between the Yosemite View Lodge and the confluence of Indian Creek there exists a section of the River with biologically and scenically valuable wetlands and riverbanks (far from the road) like nowhere else in the planning corridor."
(Individual, El Portal, CA, Comment #109-10)

Response: The National Park Service has adopted a quarter-mile river corridor for the El Portal segment of the river, similar to other river segments of the river in the park, and developed management zoning in this area that is designed to protect known resources. The park realizes the attributes of this area and is committed to protecting Outstandingly Remarkable Values in this corridor regardless of management zoning prescriptions. The Sierra Nevada Ecosystem Project report was used as a reference and is listed in Chapter IX, Bibliography.

Concern 77: The National Park Service should consider restoring the El Capitan Moraine to allow natural processes to prevail.

"Since the Merced River corridor is open for comment I want to request that the topic of restoring the natural dam at El Capitan Meadow be kept alive and not forgotten. The combination of River, Meadow, and El Cap may be our finest and surely well used resource. I believe the best luck for our buck in restoring and strengthening both river and meadow is to raise the water table to original or near original levels and allow natural processes to prevail."
(Individual, Oakdale, CA, Comment #59-1)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Restoring the El Capitan Moraine is a specific action and is not within the scope of this document.

Concern 246: The National Park Service should conduct sound ecological upstream resource management practices to ensure a healthy downstream Wild and Scenic Merced River.

"The entire Yosemite Valley is one big part of the Merced Wild and Scenic River ecosystem. From the steep granite cliffs, to the gentle valley meadows, to the Merced River hiking trails, to the far east end of the valley, all this is the Merced River Ecosystem. Thus, sound ecological upstream resource management practices can ensure a healthy downstream Wild and Scenic Merced River with excellent examples of "outstandingly remarkable values.""
(Individual, Comment #70-1)

Response: The National Park Service agrees with this concern and recognizes the importance of its role as the managing agency of 81 out of the Merced Wild and Scenic River's 122 miles. The Revised Merced River Plan/SEIS will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 339: The National Park Service should allow cut trees to rot in place rather than allowing visitors to remove them.

"Visitors should not be allowed to remove cut trees from the Park. These need to decay in the park and to benefit wildlife."
(Individual, Fresno, CA, Comment #128-20)

Response: It is not the policy of the National Park Service to allow visitors to remove downed trees or stumps. This document and the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. As a result, this public concern is not within the scope of this document.

Concern 240: The National Park Service should mitigate habitat degradation in Yosemite Valley to increase native wildlife in order to enhance the visitor experience.

"Further in my Visitor Expectations I would hope to see more indigenous animals of the valley, like reptiles and Grizzly bear. I see few snakes in general and believe many species are extinct from Yosemite Valley because of the trampling of ground over time by the multitudes of visitors."
(Individual, Mariposa, CA, Comment #87-5)

Response: The National Park Service appreciates this concern and recognizes the importance of native wildlife as a means of enhancing the visitor experience. The Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. The document and the original Merced River Plan will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. The plan contains elements designed to protect and enhance habitat for native wildlife.

Concern 442: The Revised Merced River Plan should comprehensively address the issue of user capacity throughout the whole Valley.

"The revised CMP does not comprehensively address the issue of "user capacities" throughout the Valley. Population impacts valley-wide will affect the Merced River's ecosystem, and the NPS is obligated to identify and disclose those impacts."
(County Agency, Groveland, CA, Comment #140-3)

Response: This plan it is recognized that the river corridor in Yosemite Valley comprises most of the Valley floor, and that visitors to the Valley frequently move in and out of the corridor in this segment as part of daily visitor use patterns. Therefore, the User Capacity Management Program has been designed to address the Valley --and other developed areas such as Wawona--as a whole, rather than strictly by the river boundary.

Water Resources

Concern 114: The National Park Service should protect the Merced River.

"Under the heading of "how I use the River etc." I love the river. I like to sit by the river and just watch it. I like to hear it play its symphony at night in that quiet before sleep. After or during a hike, I like to dangle my feet in it, first the toes, then the heel, then the whole foot and feel that surge of cold that revitalizes and nourishes not only my feet but my spirit. The river provides energy to the viewer, life to the fish, sustenance to the fowl, music to the listener, and in days of yore water to the thirsty. The river is worthy of being protected."
(Individual, Comment # 3-12)

Response: The National Park Service agrees with this concern and is further mandated by the Wild and Scenic Rivers Act to protect and enhance Outstandingly Remarkable Values of the Merced Wild and Scenic River.

Concern 161: The National Park Service should reassess the potential impacts of herbicides and a cell tower in El Portal on river health.

"Will NPS assess proposed actions in the river corridor, such as applying herbicides to control non-native plants and installing a cell tower in El Portal, for their potential impacts on river health and scenic qualities?"
(Individual, Comment #81-6)

Response: This concern addresses specific projects that are outside of the scope of this programmatic plan. The application of herbicides will be one of the subjects addressed in Yosemite's upcoming Parkwide Invasive Plant Management Plan, currently being developed. Any future activities in the Merced River corridor must follow the management guidance established in the Merced River Plan, as amended.

Concern 1: The Revised Merced River Plan should specify how close the contaminated sites (from the underground tanks and abandoned landfills, III-22) are to the Merced River and how these are going to be addressed.

"According to the document, over 100 underground tanks have been located and removed. The park has over 30 known contamination sites form leaking underground storage tanks, and currently 12 sites being cleaned up. I wonder how the rest of contamination sites would be taking care of. I would like to know how close those sites are located in or around the Scenic River. If you have those geographical data or resources, would you let me know ? Or would you let me know where I can find those resources?"
(Individual, Oakland, CA, Comment #1-1)

Response: This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan is a programmatic plan that does not dictate any specific actions. Existing contaminated sites in the river corridor will be evaluated and properly remediated consistent with state and federal regulations. In addition, closure activities would have to be consistent with the elements of the Merced River Plan.

Concern 307: The National Park Service should eliminate its use of asphalt concrete anywhere in the Merced River floodplain due to its toxicity and its adverse impacts on aquatic biota.

"The toxicity of asphalt, especially fresh asphalt pavement, and the impacts of poly aeromatic hydrocarbons (PAHs) and other petroleum ingredients on adjacent aquatic ecosystems may have been little studied, but considerable is known within the National Park Service (NPS). The placement of asphalt concrete anywhere in the Merced River flood plain needs to be questioned; especially close to the river. The effects of these toxins have not been evaluated in the DRMRP. PAHs have been found to pollute alpine lakes: How much more likely are they and other petroleum chemical species to impact the Merced River biota when used in Yosemite Valley within the 1/4 mile river corridor."
(Individual, Merced, CA, Comment #117-5)

Response: Asphalt is used in the river corridor only where necessary to help comply with the American Disabilities Act (ADA) requirements, help suppress and control vehicle-generated dust, and along major roadways such as Northside and Southside Drives in Yosemite Valley. In addition, as part of the VERP program, a water quality standard and indicator has been developed that includes monitoring for levels of petroleum hydrocarbons as a means to help ensure that river water quality, a component of the hydrologic processes Outstandingly Remarkable Value in many river segments, is being adequately protected.

Concern 338: The National Park Service should play an active role in restoring Hetch Hetchy.

"Bring Hetch Hetchy back. The National Park playing an active role to restore Hetch Hetchy would decrease over crowding in Yosemite Valley and extend the habitat for wild plants and wildlife and reduce traffic congestion."
(Individual, Fresno, CA, Comment #128-17)

Response: The effort to restore Hetch Hetchy Valley is not within the scope of this planning effort.

Concern 318: The National Park Service should put in place a plan to restore river banks to more natural conditions, especially in El Portal.

"Finally, we renew our request that the Merced River Plan put in place a plan or process to restore river banks to more natural conditions and subject to natural river processes. The El Portal segment has been heavily impacted by bank protection projects, which we believe may not be necessary or sustainable in the long term."
(Conservation Organization, Sacramento, CA, Comment #116-8)

Response: Ecological restoration in Yosemite National Park is part of the day-to-day operation of the park's Division of Resources Management and Science. The National Park Service has a commitment to restore natural conditions when possible, as demonstrated by the many past, present and planned restoration projects. These efforts not only protect and enhance the river's Outstandingly Remarkable Values, but preserves the rivers free-flowing condition. However, the Revised Merced River Plan is a programmatic plan that will guide future planning efforts and does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program for the Merced Wild and Scenic River.

Concern 319: The Revised Merced River Plan should address how the National Park Service will mitigate the aesthetic impacts of bank stabilization within the El Portal segment.

"[S]ome of the aesthetic impacts of these projects are mitigable and plans for their mitigation should be addressed in the river plan.10"
(Conservation Organization, Sacramento, CA, Comment #116-9)

Response: Future bank stabilization projects by the National Park Service in the El Portal segment of the Merced River corridor will address aesthetic impacts to resources. However, the Revised Merced River Plan is a programmatic plan that will guide future planning efforts and does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 354: The National Park Service should manage Yosemite Valley as part of the larger Merced River watershed and evaluate the cumulative effects of each project on the watershed.

"Yosemite Valley is a watershed. The Merced River is the core of that watershed and is affected by the numerous projects and impacts from EVERY tributary (including Yosemite Falls/Yosemite Creek) in the watershed. Nationwide, it well known that watersheds need to be looked at holistically and not in pieces, which is how Yosemite has reviewed each project. This is wrong and goes against established watershed science, preservation and restoration principles, and scientifically-established best practices."
(Individual, San Francisco, CA, Comment #121-8)

Response: All projects being considered in the Merced River watershed will undergo the appropriate level of National Environmental Policy Act (NEPA) compliance and public involvement, including the consideration and evaluation of cumulative effects, consistent with NEPA and National Park Service Director's Order #12.

Wetlands

Concern 282: The Revised Merced River Plan should include complete wetlands maps of El Portal for public review.

"The wetlands maps for El Portal are not complete (and were not included in this plan) and may not even be up-to-date. Rather than accurately mapping these significant wetlands NPS is relying on an amalgamation of data collected over the past 20 years; ongoing research and resource protection studies mean little if there is no current baseline Merced River Canyon data available for resource managers or the public."
(Conservation Organization, Yosemite, CA, Comment #111-110)

Response: The preferred alternative of this document (Alternative 2) has adopted a quarter-mile river corridor for the El Portal segment of the river, similar to other river segments of the river in the park, and developed management zoning in this area that is designed to protect known resources. Park managers realize the attributes of this area and are committed to protecting Outstandingly Remarkable Values in this corridor, including wetlands, regardless of management zoning prescriptions. This plan is a programmatic document, and as such does not propose specific projects. Any project being considered for El Portal will undergo the appropriate level of National Environmental Policy Act (NEPA) compliance and public involvement, including the consideration and evaluation of wetlands, consistent with NEPA and National Park Service Director's Order #12.

Wetland maps of El Portal were presented to all participants at the El Portal Town Planning and Advisory Council meeting conducted as part of the public involvement process associated with this planning effort. All reference materials used in the preparation of this document are available to members of the public upon request.

Vegetation (not rare, threatened, nor endangered)

Concern 232: The National Park Service should avoid zoning rare Yosemite oak woodlands to allow for development.

"Zoning of the rare Yosemite oak woodlands to allow lodging, campgrounds, or other development should be avoided."
(Conservation Organization, Oakland, CA, Comment #75-7)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Management zone prescriptions are only being addressed in the El Portal segment of the Merced Wild and Scenic River corridor and more protective zoning has been placed in sensitive resource areas.

Concern 334: The National Park Service should replant and restore natural vegetation where there are social trails.

"Replant to restore natural vegetation where there are social trails and boardwalk, or close off instead."
(Individual, Fresno, CA, Comment #128-13)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Yosemite's VERP program includes a measurable standard and indicator that specifically relates to social trails, and park management will take appropriate management actions (see list of potential management actions in Chapter II) in order to properly protect and enhance the river's Outstandingly Remarkable Values.

Concern 233: The National Park Service should protect meadow health and native oak habitat.

"Care must be taken in the protection of the Merced River not to overlook the impact of infringing on the native oak habitat."
(Conservation Organization, Oakland, CA, Comment #75-5)

"Any future Yosemite Plan should avoid endangering meadow health and immediate plans should be undertaken to correct current problems. No River Plan should be approved without completely addressing this issue."
(Conservation Organization, Oakland, CA, Comment #75-8)

Response: The National Park Service agrees with this concern and has identified through the VERP program a specific indicator and measurable standard specifically related to the extent of social trails in meadows. Though a specific indicator for oak habitat has not yet been defined, the National Park Service has the ability to refine existing indicators or develop new indicators. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Exotic Species

Concern 113: The National Park Service should only remove non-native plant species if they are negatively impacting the river or flora and fauna.

"As for the PLANT ELIMINATIONS -- my theory is that some of these immigrants as I like to call these non-native species have been in the park forever and you should be VERY careful in determining which plants are undesirable. Just because they are non-native in my book is not reason enough to wipe them out. Good reasons for wiping them out are their impact on other species more desirable for river and flora and fauna, not just because they are non- native. After all the most non-native thing on the planet is the human being even though you might like to wipe some of us out. This will take some expert planning."
(Individual, Comment #3-7)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS.

However, the National Park Service's invasive plant eradication program is targeted at non-native plants that are in fact harming native flora and fauna. Plants such as yellow star thistle and Himalayan blackberry are extremely aggressive invaders that compete with native species for water and soil resources, and eventually crown out some native species. An in-depth Invasive Plant Management Plan is currently under development, which will more clearly define Yosemite's methods for non-native plant eradication.

Concern 274: The National Park Service should adequately evaluate the effects of ground disturbance and the introduction of invasive species associated with park projects.

"The best method of preventing new populations of invasive plants from establishing in Yosemite is to halt the ground disturbing development projects. If Yosemite National Park does not come to terms with the fact that bringing in bulldozers, construction equipment, vehicles from other construction sites, construction workers boots from other project areas, fill dirt from areas both outside Yosemite National Park and from sites within the Park already contaminated with invasive exotics, and digging into the Earth brings in invasives and creates the disturbed ground in which they flourish; then prevention of new populations of invasive plants establishing themselves in Yosemite will not happen -- continued multiplication of additional species and additional concentrations of invasive exotics will be imported, will spread, and will take hold."
(Conservation Organization, Yosemite, CA, Comment #111-104)

"Among the projects which we reference are those planned to be implemented or begun in 2005, as listed in Appendix F of the Draft Revised Merced River Plan (D. R. MRP): eg, the Curry Village and East Yosemite Valley Campgrounds Improvements (including disturbing new areas for RV parking lots), El Portal Road Improvement Projects (Segment D), Northside-Southside Drive Repaving ("may require disturbance of some new areas"), Visitor Use and Floodplain Restoration Program (redisturbing disturbed lands and then digging up undisturbed areas elsewhere to replace a small amount of the campgrounds), Yosemite Lodge Area Redevelopment, Yosemite Village Interim Parking Improvements, Curry Village Employee Housing (27 new buildings in a previously undisturbed and undeveloped area), the commencement of Phase 1 of the E. Yosemite Valley Utilities Improvement Project (a major ground disturbing project which will result in digging up, trenching, and bulldozing substantial areas of E. Yosemite Valley."
(Conservation Organization, Yosemite, CA, Comment #111-105)

"The NPS has failed to adequately evaluate…the effect from project disturbance on creating additional amounts of and bringing in additional kinds of invasive plant species."
(Conservation Organization, Yosemite, CA, Comment #111-127)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. However, the National Park Service's invasive plant eradication program is targeted at non-native plants that are in fact harming native flora and fauna. Plants such as yellow star thistle and Himalayan blackberry are extremely aggressive invaders that compete with native species for water and soil resources, and eventually crown out some native species. An in-depth Invasive Plant Management Plan is currently under development, which will more clearly define Yosemite's methods for non-native plant eradication.

Concern 275: The National Park Service should evaluate the use of pesticides.

"NPS has failed to adequately evaluate the use of pesticides."
(Conservation Organization, Yosemite, CA, Comment #111-58)

"FoYV has recently learned that Mariposa County and the Mariposa Unified School District regularly applies herbicides (e.g. Roundup Pro Herbicide EPA #524-475 Active Ingredient Glyphosate 41%) in El Portal in an attempt to control the yellow star thistle populations near the pool, library, high school, and elementary school. There will probably be serious consequences found in the long run from using manufactured chemicals such as Roundup. We need to preserve our national parks and Wild and Scenic rivers as havens for all of us. Examples of possible consequences of these chemicals and more extensive discussion to follow at end of comments."
(Conservation Organization, Yosemite, CA, Comment #111-103)

"Some ENVIRONMENTAL FATE AND EFFECTS of commonly used pesticides. This one, Roundup is used in El Portal. For example: Glyphosate (is a candidate for evaluation as a toxic air contaminant by the California Department of Pesticide Regulation. Formaldehyde, one of glyphosate's breakdown products, is listed as a toxic air contaminant. (DPR 1994). Between 14% and 78% of glyphosate applied as a ground spray drifts off site (Freedman 1990, 1991). It has been documented to affect plants as far as 131 feet away, and residues have been detected 1,312 feet downwind (Marrs 1993; Yates 1978). Glyphosate is highly persistent in soil, taking from 24 to 249 days for one- half of it to transform or biodegrade (Lappe 1996). Glyphosate has been found in surface water as the result of agricultural run-off (Frank 1990; Edwards 1980) and in ground water (U.S.EPA 1992). Roundup is highly toxic to fish and aquatic organisms (Product label). Juvenile fish are particularly sensitive to the toxic effects of Roundup. Physical and chemical factors such as temperature, pH and solute concentration in aquatic ecosystems influence the acute toxicity of glyphosate to aquatic organisms (Caltrans 1991). Glyphosate was shown in one study to inhibit the growth of mycorrhizal fungi, organisms which are essential to ecosystems and enhance plant survival (Cummins 1991). " (A)http://www.trentu.ca/biology/berrill/Research/Roundup_Poster.htm
(B) http://lists.sausalcreek.org/pipermail/fosc-sausalcreek.org/2005/000436.html
(C) http://www.alternatives2toxics.org/round.htm"
(Conservation Organization, Yosemite, CA, Comment #111-115)

Response: The National Park Service has evaluated the use of pesticides for safety and necessity. Many problematic, non-native species cannot be effectively eradicated without the use of pesticides. In addition, the National Park Service requires that individuals responsible for pesticide application be trained in the safe use of such chemicals in order to minimize health and safety risks and to minimize their concentration and application to the greatest extent possible.

Human/Wildlife Conflicts

Concern 332: The National Park Service should remove the new picnic tables at the Yosemite Falls area, as the National Park Service is not currently able to deal with wildlife issues.

"Regarding the picnic tables newly placed in the Lower Yosemite Falls area, the National Park has not been able to manage wildlife food issues; that's why bears are put down every year. Remove these picnic tables once there is indication that it's not working in favor of wildlife and resource protection" (Individual, Fresno, CA, Comment #128-11)

Response: The park's VERP program developed in response to the 2004 Court order includes a measurable standard and indicator that specifically relates to wildlife exposure to human food, and will take appropriate management actions (see list of potential management actions in Chapter II) in order to properly protect and enhance the river's biological Outstandingly Remarkable Value.

Concern 340: The National Park Service should make the sign advising against feeding wildlife at the South entrance more visible.

"The Blue 'sign' at the South Entrance – the no feeding bear sign can hardly be seen."
(Individual, Fresno, CA, Comment #128-21)

Response: The park's VERP program developed in response to the 2004 Court Order includes a measurable standard and indicator that specifically relates to wildlife exposure to human food, and will take appropriate management actions (see list of potential management actions in Chapter II) in order to properly protect and enhance the river's biological Outstandingly Remarkable Value.

Concern 386: The National Park Service should recognize that feeding wildlife in Yosemite National Park is a huge issue.

"Feeding wildlife, of course is a huge issue. The park cannot manage the problem with visitors and bears and squirrels, birds being fed now the way it stands currently. Why do they want to increase the problem by putting picnic tables where you don't have them already? One of the excuses I get is that you have people eating there and throwing garbage and congregating there, and having picnics as it is, so why not put tables? Why do you want to enforce incorrect behavior? I've written about this and the response I've gotten is that we're going to put in bear-proof containers and we're going to have enforcement monitor it. You're not doing that now, where it exists."
(Individual, Fresno, CA, Comment #97-2)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. However, the park recognizes that feeding wildlife in Yosemite National Park is an ongoing concern, and visitors are routinely informed of this along with measures to help curtail this activity. As part of developing the user capacity management program for the river corridor, the park has specifically developed an indicator "wildlife exposure to human food" to address this issue. The overall goal of this indicator and its related standard is to achieve a 5% reduction in feeding wildlife, food left unattended, overflowing trash cans or dumpsters, and food debris annually, and evaluating its success using a 5-year running average. More information regarding this indicator and standard, along with potential management actions that could be implemented to help achieve this goal is presented in Chapter II of this document.

Concern 461: The National Park Service should review carrying capacity in order to increase the viability of the redneck, gopher, and rattlesnakes.

"I feel the redneck gopher and rattle snakes are non-existent or reduced to an un-viable number in Yosemite Valley and are a Resource Experience that needs Protection with a carrying capacity."
(Individual, Mariposa, CA, Comment #87-6).

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. The park's VERP program includes measurable standards and indicators that are specifically focused on biological resources in the river corridor, and will take appropriate management actions (see list of potential management actions in Chapter II) in order to properly protect and enhance the river's biological Outstandingly Remarkable Value, which include snakes.

Rare, Threatened, and Endangered Species

Concern 283: The Revised Merced River Plan should clarify that the National Park Service has identified and mapped the locations of elderberry shrubs and valley elderberry long horned beetle in El Portal.

"The Valley elderberry longhorn beetle (VELB) has been identified as occurring in El Portal. This specie relies on its host, elderberry shrubs, found in and around El Portal along the Merced River. It is not clear from this plan if the NPS has identified and mapped the location of all the elderberry shrubs and the presence of VELB in the El Portal Administrative Site; therefore, how can this endangered specie be adequately protected? (See Appendix E-1)"
(Conservation Organization, Yosemite, CA, Comment #111-129)

Response: Park staff has identified areas in the El Portal Administrative Site where known locations of elderberry shrubs and the valley elderberry long-horned beetle are known to exist, and their locations have been taken into consideration with respect to determining river corridor boundaries and management zone prescriptions.

Concern 46: The Revised Merced River Plan should utilize the Sierra Nevada Network and Inventory Monitoring Plan for distribution and abundance data for at-risk species.

"Some distribution and abundance data for these and other at-risk species may already be available as a result of the National Park Service Sierra Nevada Network Inventory and Monitoring Plan. The Inventory and Monitoring Plan, and information that it has generated, should be utilized as part of the Merced Wild and Scenic River Plan."
(Conservation Organization, Twain Harte, CA, Comment #29-4)

Response: The National Park Service acknowledges this concern. Information from this program, to the extent applicable, is but one source of information available to the park for consideration in managing natural resources.

Air Quality

Concern 440: The National Park Service should better address air quality concerns.

"[A]ir quality continues to be a neglected area of concern."
(County Agency, Groveland, CA, Comment #140-2)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS.

Air quality in the river corridor is influenced by both regional and local sources. To help minimize adverse affects to local air quality in the river corridor, the park has recently acquired a new fleet of hybrid diesel-electric busses for use as in-valley shuttle buses. These new state-of-the-art busses are substantially quieter, more fuel-efficient, and far less polluting than their predecessors, standard diesel buses. In addition, the original Merced River Plan/FEIS identifies measures that the National park Service could undertake to remedy local construction-related emissions that might occur under the Merced River Plan. These measures are referred to as best management practices, which generally include but are not limited to the following: watering of construction areas; covering trucks hauling materials that could spill onto local roadways; covering stockpiles: limiting vehicle speeds in unpaved areas; installing erosion control measures; and timely revegetation.

Concern 79: The National Park Service should recognize that local air quality affects the Merced River.

"One thing that's come up in the past is looking at air quality. Things in the air eventually hit the water."
(Individual, Oakland, CA, Comment #38-2)

"The DMRCMP contemplates an inadequate limitation of wood burning in campfires and in concession lodgings (p. III-56), an inadequate discussion of mortality from ozone (p. III-57) - see JAMA 2004; 292:2311. Vol. 292 No. 19, November 17, 2004, and with reference to both of the above and more generally, fails to adequately mitigate local emission sources made more significant by the fact that the San Joaquin Valley Air Pollution Control District has adopted the most extreme nonattainment status and during periods when management fires or wildfires are affecting air quality."
(Individual, Fremont, CA, Comment #51-12)

Response: Air quality in the river corridor is overwhelming influenced by sources from outside the river corridor, and in many instances from sources outside the park. Though air quality is not directly monitored through the VERP program, the National Park Service does monitor air quality through an independent monitoring program. Because air quality has not been identified as one of the river's Outstandingly Remarkable Values, issues related to air quality will be evaluated on a case-by-case basis in future project implementation plans.

Concern 126: The Revised Merced River Plan should recommend early adoption of the California Air Resource Board's Public Agency Rule.

"The DMRCMP does not recommend early adoption of the California Air Resource Board to be implemented approximately from 2007 to 2011 to further control and limit emissions from non-urban buses operated by public agencies (Public Agency Rule.)"
(Individual, Fremont, CA, Comment #51-18)

Response: The National Park Service is committed to maintaining high standards of clean air quality. However, the Revised Merced River Plan is a programmatic plan that will guide future planning efforts and does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 127: The National Park Service should re-evaluate emissions requirements for the new hybrid diesel-electric buses and commercial buses entering the park.

"The new hybrid diesel-electric buses will not have Closed Crankcase Filtration installed and will not save much fuel compared with standard diesel buses. The Categorical Exclusion authorizing the acquisition of these buses was not made public timely. Commercial buses operating in the park will not be required to be equipped with particulate traps, to be fueled with ultra-low sulfur diesel fuel or be cited for excessive idling as a result of this plan, nor have they been cited for doing so in the past to my knowledge."
(Individual, Fremont, CA, Comment #51-19)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts that does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program.

Concern 128: The Revised Merced River Plan should use more stringent standards when setting the baseline for Air Quality.

"With reference to Yosemite's Class 1 airshed status where "the lowest or most stringent, increment (least extent of allowable air quality degradation) applies...", NPS relies too much on the state ozone SIP, the state PM-10 SIP and the state PM-2.5 SIP (see p. III-54, Table III-2: Air Basin Attainment/Nonattainment Designations and footnotes). For example, page III-59, Footnote 17a states that "data from IMPROVE monitoring stations do not comply with the new federal reference method for measuring PM2.5 and thus cannot be used for compliance purposes (e.g. in determining attainment or nonattainment)." Comparing Yosemite's visibility impairment to that of the Great Smoky Mountains National Park, the worst in the nation, is deceiving and misleading to the lay reader."
(Individual, Fremont, CA, Comment #51-20)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Air quality in the river corridor is overwhelming influenced by sources outside the river corridor, and in many instances from sources outside the park. However, issues related to air quality will be evaluated in future project implementation plans.

The Sound Environment

Concern 227: The National Park Service should eliminate noise that disrupts the Outstandingly Remarkable Values and detracts from the beauty and visitor appreciation of Yosemite Valley.

“Eliminate noise as a major pollutant and disrupter of the Outstandingly Remarkable Values of Yosemite Valley. One small mechanical noise is sufficient to detract from the beauty and spiritual appreciation of this great temple “made without hands.”
(Individual, Santa Rosa, CA, Comment #74-4)

Response: The National Park Service is dedicated to reducing noise levels in order to preserve the visitor experience. The park has recently acquired hybrid diesel-electric buses which are quieter than standard diesel buses. All future project implementation plans will be assessed for their potential impacts on many resources, including noise. However, the Revised Merced River Plan is a programmatic plan that will guide future planning efforts and does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 359: The National Park Service should assess noise levels when analyzing solitude in the wilderness.

“We believe the Park Service needs to look at a broader notion of solitude—including, for example, the tremendously disruptive impacts posed by noise from other visitors or by passing aircraft noted in the plan. Many wilderness climbers on the walls of Yosemite Valley find the constant noise from traffic, buses giving amplified talks and passing aircraft overhead to be far more serious impacts on wilderness solitude than seeing other climbers on a neighboring climbing route.”
(Business, San Rafael, CA, Comment #112-12)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.. Assessing noise levels when analyzing solitude in wilderness will be one of the issues addressed in an upcoming revision to the park’s Wilderness Management Plan.

Concern 221: The National Park Service should require better buses in the park, such as those that run on natural gas or electricity to improve the camping experience.

“[I} want to comment on the section regarding “Background Sound and Noise Levels,” p. III-63. It mentions that “the greatest source of sound was the numerous buses . . . .” This problem is especially noticeable in the Upper and Lower River Campgrounds, making the camping experience most unnatural. These buses are supposed to eliminate the problems associated with traffic congestion, but their noise makes it seem as if we one is camping in the middle of a city. Please write into your plan that the buses must be quiet, such as those run on natural gas or electricity.”
(Individual, Comment #80-1)

Response: The National Park Service is dedicated to reducing noise levels in order to preserve the visitor experience. The park has recently acquired a new fleet of hybrid diesel-electric buses for use in the in-valley shuttle system. These new state-of-the-art buses are substantially quieter and more fuel efficient than their predecessors, standard diesel buses. In addition, all future project implementation plans will be assessed for their potential impacts on many resources, including noise. However, the Revised Merced River Plan is a programmatic plan that will guide future planning efforts and does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor.

Scenic Resources – Visual Quality

Concern 243: The Revised Merced River Plan should include the whole of Yosemite Valley as a scenic Outstandingly Remarkable Value, including views from the Valley rim looking down as well as from the Valley floor looking up.

"The view of Yosemite Valley as a whole is an ORV.NATIONAL PARK SERVICE has used the specific viewsheds identified in the 1980 General Management to constrict the Scenic Outstandingly Remarkable Values to those particular views photographed or painted by certain artists. If those artists had spent additional time in Yosemite Valley, they would have photographed and painted additional views -- a whole lifetime would not suffice. While the Yosemite Valley Scenic ORV lists many magnificent views "from the river and its banks", THE VALLEY AS A WHOLE (as John Muir observed, "The Valley Comprehensively Seen") is an ORV. In addition, NATIONAL PARK SERVICE has gotten lost in a bureaucratic haze; a haze that obscures the fact that not only views standing in the Merced River corridor in Yosemite looking UP, but also views from above looking DOWN on the Merced River corridor from the top of the Valley walls -- the river, meadows, uplands, Valley walls -- is certainly an ORV. It is a complete understatement to say those views from above are a rare opportunity, to look down right over this particular U-shaped River Valley from vertical cliffs, hanging valleys, and rock faces 2000 - 3000 feet almost directly above."
(Conservation Organization, Yosemite, CA, Comment #111-119)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues.. The Scenic ORV for Yosemite Valley was established in the 2000 Merced River Plan, and was developed according to guidance provided by the Interagency Coordinating Council for Wild and Scenic Rivers. Namely, the scenic ORV for the Valley encompasses views of notable features from the river and its banks.

Cultural Resources

Concern 314: The National Park Service should diligently research, identify and protect all archeological and historic sites within the El Portal Administrative Site.

"The Council also urges the National Park Service to diligently research, identify, and protect all archeological and historical sites within the El Portal Administrative Area."
(Conservation Organization, Mariposa, CA, Comment #107-3)

Response: The National Park Service has inventoried the entire El Portal Administrative Site for archeological and historic sites. This included background research, surface surveys, recordation, mapping, and consultation with the State Historic Preservation Officer and affiliated American Indian Groups. El Portal is nominated for the National Register as an archeological district and some archeological sites have undergone more rigorous investigation such as excavation to determine whether or not the site is eligible for the National Register of Historic Places as a single property.

Prior to a future master plan or implementation projects conducted in El Portal, a comprehensive background research and inventory of the area in and around these project will be conducted. The National Park Service follows the 1999 Programmatic Agreement among the California State Historic Preservation Office, the Advisory Council on Historic Preservation and Yosemite National Park and the regulations of Section 106 of the National Historic Preservation Act which require that all cultural resources are inventoried and impacts of the project on cultural resources are assessed. The National Park Service consults with the State Historic Preservation Officer and affiliated American Indian groups in determining avoidance and mitigation measures for these resources. Additionally, most of the cultural resources within El Portal further benefit from the Wild and Scenic Rivers Act which requires that all Outstandingly Remarkable Values are protected and enhanced.

Concern 410: The Revised Merced River Plan should provide additional information in the final document regarding the archeological and traditional cultural resources within El Portal.

"While the preferred boundary alternative is more protective than the no action alternative, potential benefits and impacts, considering cumulative past impacts, should be considered when delineating and zoning the El Portal boundary."
(Conservation Organization, San Francisco, CA, Comment #125-4)

Response: The Revised Merced River Plan has discussed the known archeological resources in El Portal in detail to the greatest extent possible. The area has been fully surveyed for archeological resources and the overall number and types of resources are thoroughly discussed in the Affected Environment chapter.

By nature, traditional cultural resources in El Portal are not as easily delineated as archeological sites. Known traditional cultural resources have been included for protection as part of the cultural Outstandingly Remarkable Values determination and the subsequent boundary delineation. The National Park Service has consulted with American Indian groups regarding traditional cultural resources throughout the planning process for the Revised Merced River Plan. In addition, the National Park Service is currently working through a traditional cultural resource study to better inform future planning efforts. Potential master planning or new development in El Portal would undergo an environmental review process that will incorporate new data from the ongoing study.

The discussion of all cultural resources has been increased in the document since the original Merced River Plan. The National Park Service is prohibited to reveal specific cultural resource locations and the specific characteristics found at each individual site due to the sensitive nature of these non-renewable resources.

Concern 435: The National Park Service should be aware of local people's connection to burials in the area, and should provide more funding to identify the locations of burial grounds.

"The reason I'm here tonight I'm part Native American and some of my peoples are buried along the Merced River. It's a little bit further west than the area that we're concerned with tonight. Specifically it's Good Gulch down below Briceberg… There are 2 grave sites at Good Gulch, it's near McCabe Flats. One of the people buried there is my great grandfather, who is not Native American. His name Alexander Cameron Matlock… The other grave is Jeff Landrum my great uncle, who is Native American Southern Sierra Miwuk. So, these graves are in that location. We know where they are. My family does. They're marked, but they're kind of set off to the side, they're not real obvious."
(Individual, Catheys Valley, CA, Comment #102-1)

"I wonder what traffic will mean for my family's graves and this sort of thing. My hope is that the government will protect these sorts of sites and that they're are interested in talking to Native Americans to find out more about the cultures of the people living there. The precise locations of these graves and that sort of thing."
(Individual, Catheys Valley, CA, Comment #102-2)

Response: The National Park Service places a very high priority on protecting cultural resources, particularly those associated with burials. All future park projects will undergo an environmental review to assess potential effects on cultural resources, ensuring compliance with all applicable laws and regulations. However, the 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to correct the deficiencies in the original Merced River Plan/FEIS. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. As such, this concern was not directly addressed in this document, but the issues raised by this concern will be evaluated as appropriate in future implementation plans.

Concern 212: The National Park Service should gather sufficient information to identify the Cultural Resource Outstandingly Remarkable Values in the entire river corridor.

"The Tribe is concerned about the lack of information to identify the Cultural Resources of ORV's in Yosemite, El Portal, Wawona and the two major drainages (Merced and South Fork). The traditional use study that is currently underway has not been going smoothly and the Tribal members are hesitant to divulge information to a person that has not been accepted by the Tribe."
(Tribal Organization, Mariposa, CA, Comment #84-3)

Response: Because the National Park Service has selected the maximum allowable acreage for the river corridor boundary throughout Yosemite, all cultural Outstandingly Remarkable Values would be protected under the Wild and Scenic Rivers Act whether they are currently identified or not. Most areas of the corridor have been subject to complete historic structures, historic landscapes, and archeological site/district inventory with the exception of portions of the wilderness. Concerns about the traditional use study currently underway are being addressed. The National Park Service is internally responding to these concerns, and redesigning the study.

For example, this redesign includes an expansion to cover these resources parkwide; other components of the redesign are currently being reviewed.

Concern 409: The Revised Merced River Plan should address the issue of tribal access to the river corridor for traditional practices.

"The entire El Portal area is considered to be a traditional use area by members of associated Indian tribes, which include Southern Sierra Miwuk Nation and the Paiute and Central Sierra Me-wuk (p. 111-72). The cumulative impacts analysis notes that development of facilities within the river corridor have disturbed or destroyed numerous traditional cultural resources and compromised the integrity of numerous other such resources (p. P1-84). It is not clear to what extent these past impacts occurred in El Portal. The DSEIS also states that El Portal is currently the focus of a study to inventory and document traditional resources important to Indian people, and that currently only incidental information exists for El Portal (III-71). Additionally, El Portal contains some of the oldest prehistoric sites in the river corridor (IV-78); sites that are exceptional in their significance to the local American Indian community (III-70). The El Portal archeological district contains 17 known sites (III-69)."
(Conservation Organization, San Francisco, CA, Comment #125-3)

Response: The user capacity program does not attempt to restrict American Indians who are culturally associated with the lands in Yosemite National Park and who access park lands to conduct traditional cultural practices for the purpose of retaining their cultural heritage. These activities are regulated under federal regulations, park policies, the other elements of the Merced River Plan, and agreements between the National Park Service and the tribes. A study of traditional uses in the park is currently under way and could result in additional revisions to existing agreements. Traditional uses comprise a very small portion of overall use of the corridor and are conducted in a manner that is protective of the Outstandingly Remarkable Values; therefore, these uses are not counted as part of the use limits identified in the user capacity program alternatives.

Concern 396: The Revised Merced River Plan should improve upon past practices by recognizing American Indian values in the river corridor, and explain how these values will be protected.

"In follow-on park plans such as the Lodge and Curry Eas, Park administrators use the "net gain" argument--except Native American values (Cultural ORV) get trumped every time; what clear and objective methodology will guarantee protection of Native American values (Cultural ORV) besides counting cars in parking lots?"
(Individual, Oakhurst, CA, Comment #55-60)

"The Merced River plan as it stands, I don't feel that the park service is being very generous or very kind in the American Indian values and properties that exist up there. They have been very extremely disrespectful in the past towards preserving that culture and that heritage...They [NATIONAL PARK SERVICE] have disregarded a lot of common sense in their planning and their procedures. They've shown a lot of disrespect for the American Indian community."
(Individual, Fresno, CA, Comment #135-1)

Response: Since the 2000 Merced River Plan, the National Park Service has committed to monitoring effects to traditional cultural resources under the Visitor Experience and Resource Protection (VERP) framework. A VERP indicator was created to specifically address visitor use impacts on three traditionally gathered plant species. Additionally, since the 2000 Merced River Plan, the National Park Service has initiated parkwide studies, in consultation with affiliated American Indian tribes, to better understand traditional cultural resources and values throughout the park.

For any future management action in the river corridor, the National Park Service will apply a consistent set of decision-making criteria that consider the boundaries, classifications, Outstandingly Remarkable Values, the Section 7 determination process, management zoning, the River Protection Overlay, and the VERP framework. Additionally, the park will continue to implement the 1999 Programmatic Agreement among the State Historic Preservation Office, the Advisory Council on Historic Preservation, and the National Park Service and they will continue to consult with American Indian tribes throughout project planning and implementation. These combined actions will ensure that impacts to traditional cultural resources and other cultural resources are considered in any future management action.

Concern 436: The National Park Service should not develop near burial ground sites.

"There are several burial grounds in the El Portal region. I don't have the statistics on those tonight, or I can't show you where those are on the map, but I vaguely know where they are. My hope is that the park will provide funding or the sorts of resources that will help the native peoples in the areas identify those precise locations and to increase the awareness of the interest and of the history of the peoples of that group up as time goes on."
(Individual, Catheys Valley, CA, Comment #102-3)

"I hope that those burial sites are not near where the new resource building is being built in El Portal or other massive major development that's being planned, which we hope doesn't be happen."
(Individual, Cupertino, CA, Comment #103-1)

Response: The National Park Service is committed to sensitive treatment and protection of areas highly valued by the culturally-associated American Indian tribes. The presence of ancestral remains in El Portal and throughout the park is an important cultural link for present-day generations of Indian people. In keeping with federal laws, regulations, and National Park Service policy, the National Park Service continues to consult with these tribes regarding treatment of resources such as burial areas. Furthermore, known burial areas have been included as part of the cultural Outstandingly Remarkable Values and are included within the designated quarter-mile river boundary. By this inclusion, these areas would undergo standard environmental review under such legislation as the Native American Graves Protection and Repatriation Act and the National Historic Preservation Act, with the addition of Wild and Scenic Rivers Act guidelines which mandate that any future actions within the boundary enhance and protect Outstandingly Remarkable Values.

Concern 248: The National Park Service should redirect the focus of the traditional use study that is currently underway to the restoration of degraded gathering areas.

"This [traditional use] study needs to be redirected to something else that will assist the Tribe like Restoration of gathering area that are disappearing or producing low yield of materials due to ecological changes Park wide."
(Tribal Organization, Mariposa, CA, Comment #84-4)

Response: The National Park Service does continue its commitment to the protection of traditional cultural resources. As part of this commitment, options for reassessing the direction of the traditional use study are currently being internally reviewed. In addition, the VERP program includes an indicator that helps protect traditional cultural resources. The indicator, "Extent/Magnitude of 3 Traditionally Used Plant Species," has as its standard: "No alteration of characteristics of the traditional cultural resources that make them eligible for listing in the National Register of Historic Places and evaluated on an annual basis." This annual assessment commits the park to maintaining the health and protection of these resources as part of the VERP monitoring program. However, the 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, the specific issues raised in this concern are not addressed at this planning level. Visitor Experience and Resource Protection (VERP)

Concern 39: The National Park Service should consider that an unlimited number of people could potentially enter the river corridor and the facility footprint could increase under the preferred alternative.

"Your other options, the ones that cap visitation at 5 million per year is, as you say not your preferred method. They way you represent your views in the study, indicates that you are trying to sell us on the idea that your preferred option, option two doesn't cap visitation, but keeps the control of visitation levels under the control of the public via the VERP system."
(Individual, Truckee, CA, Comment #26-2)

"Finally, the facility footprint may be increased under VERP, which is something I'm concerned about and should be brought to light as well."
(Organization, Twain Harte, CA, Comment #34-9)

Response: The National Park Service has, and will continue to implement components of Yosemite National Park's User Capacity Management Program that provide limitations on use beyond the Interim Facility Limits. As described in Chapter II of the Final Revised Merced River Plan/SEIS, the National Park Service currently manages for limits on the number of people (such as the Wilderness Trailhead Quota System), Limits on Facilities (such as campsites, lodging units, parking and utility systems capacities), Limits on Specific Activities (such restrictions on rafting outlined in the Superintendent's Compendium), and Limits on Environmental/Experiential Conditions (such as redirecting traffic when levels reach capacity).

Concern 42: The Revised Merced River Plan should specify which resources are most at risk from visitor use and clearly detail how those resources will be protected.

"[W]e believe that it's important that the indicators and standards truly focus on what's most at risk. If you go through the biological and hydrological indicators now, which is really the quota for the ecosystem, it's questionable, except for water quality, whether the rest of these are really focusing on species or the attributes or the resources that may be of most concern."
(Individual, Twain Harte, CA, Comment #36-5)

"We too urge that the final plan be more specific and clear about the resources that are most at risk from visitor use and the actions that will be taken to protect those resources."
(Conservation Organization, San Francisco, CA, Comment #71-1)

"So our center suggests that instead of having minimal biological indicators, and right now out of the current 11 examples that are up there on the screen, most of those are social in terms of whether or not they are managing or measuring something. And we're suggesting that the park assemble your best biological team and develop a clear, measurable list of at-risk species that truly have high potential to be affected by visitor use and then figure out how is best to measure them."
(Individual, Twain Harte, CA, Comment #106-4)

Response: The National Park Service has adopted the VERP framework to address user capacities and ensure the protection of natural cultural resources and the visitor experience. VERP relies on the concept of desired conditions, which identify how different areas in the river corridor would be managed. As part of VERP, measurable indicators and standards have been developed to provide information on whether those desired resource conditions and visitor experience opportunities are being met. The National Park Service recognizes that that the selection of specific indicators is an important step in the VERP process and requires consideration of a number of factors which relate to the effectiveness of the indicator. Park staff determined that indicators must satisfy fourteen criteria in order to be included as part of the program. These are described in Chapter II of this document. Through time, indicators and standards may be further refined as part of the VERP monitoring program in order to help ensure that the river's Outstandingly Remarkable Values are being protected and enhanced.

Concern 47: The Revised Merced River Plan should explicitly state standards, monitoring protocols, and management actions for each indicator in the final document.

"Specific, quantifiable standards that directly protect the most at-risk resources (indicators) from visitor use also need to be clearly and explicitly stated in the final plan. We suggest that standards be set at no measurable user-associated decline from baseline distribution and abundance."
(Conservation Organization, Twain Harte, CA, Comment #29-5)

"Specific monitoring protocols should be detailed in the final plan and explain how monitoring will; (a) be able to quantifiably determine the status of the indicators relative to their standards, (b) directly measure cause-and-effect visitor impacts on indicators, and provide for long term trend analysis. In other words, the plan's monitoring component needs to clearly lay out how the monitoring will truly assess the status of at-risk resources and how that monitoring can realistically be carried out."
(Conservation Organization, Twain Harte, CA, Comment #29-6)

"Specific management actions for each indicator need to be clearly stated in the form of "if-then" statements. For example, "If the abundance of mountain red-legged frogs in any given location declines measurably relative to the baseline abundance due to visitor use, then that location will be closed to visitor use until abundance returns to baseline levels."
(Conservation Organization, Twain Harte, CA, Comment #29-7)

Response: The Revised Merced River Plan documents the VERP process, including the process that park managers would use to evaluate and implement management actions needed to address protection and enhancement of the river's Outstandingly Remarkable Values. Because the Revised Merced River Plan is a programmatic document, it cannot predict and pinpoint what specific actions will be implemented in the future, as the actions taken will vary depending on the types of impacts that are found. An action taken in one situation or in one area of the park may not be effective in another. Also, as conditions change, as technology changes, and as visitor use patterns change, management strategies must change accordingly. A review of recreation impact management literature documents that there is a wide range of measures that can be effective in reducing or mitigating visitor impacts on resources and visitor experience. Consequently, the measures selected must be based on the specific issues to be addressed. This type of decision-making criteria has been presented in Chapter II (under "Management Action Strategies and Tactics), which includes a list of questions managers would consider when defining and determining the type of action to take. It should be noted that although monitoring protocols are not included in this programmatic-level plan, they are made available to the public and can be found on the park's web site (*www.nps.gov/yose/planning/ucmp.htm*).

Concern 51: The Revised Merced River Plan should not choose a range when setting standards for indicators.

"[I]n alternative four the management of VERP quotas will be based on a range. Well, the reality is, if you have a range of five to ten, it's not likely that five is going to lead to an action, because when you have a range, you're not usually going to actually have something that is a drastic consequence of reaching the threshold until you actually reached the threshold. ...[It] is not clear, based on the document, exactly how clear the consequences will be."
(Individual, Twain Harte, CA, Comment #36-4)

Response: The National Park Services recognizes that the selection of specific indicators is an important step in the VERP process, and that it requires consideration of a number of factors which relate to the overall effectiveness of the indicator. Park staff determined that indicators must satisfy fourteen important criteria, which are described in Chapter II of this document. As park managers gain knowledge through field-testing the VERP program, the indicators (and related standards) may be further refined. This iterative learning and refining process is one strength of the VERP program, in that it can be adapted and improved as further knowledge is gained. The National Park Service would inform the public of VERP program progress and proposed revisions to indicators and standards through the park's ongoing public involvement process. Taken collectively, the indicators (and standards) presented in the park's VERP program would provide sound information on the overall condition of important park resources, visitor experience opportunities, and the Merced River's Outstandingly Remarkable Values.

Concern 52: The Revised Merced River Plan should choose indicators for specific issues such as higher risk sensitive species.

"At-risk species that we would like to see be used as indicators include, but should not be limited to; California red-legged frog, Foothill yellow-legged frog, Mountain yellow-legged frog, California spotted owl, Yosemite toad, Mountain Red-legged frog, Marten and Fisher."
(Conservation Organization, Twain Harte, CA, Comment #29-3)

"As I read in the management plan, it appears that you guys are interested in indicators that provide as much information and as wide a range of environmental, socioeconomic, and cultural issues as possible in each indicator, and I would say that it might be helpful to have some indicators to address more specific issues; that is, things which have a much higher risk, for instance, such as sensitive species or sensitive habitat rather than just having the general indicators."
(Individual, Twain Harte, CA, Comment #34-3)

"There are certain T, E or Rare species which we and others have identified in El Portal which are neither identified nor listed in the D. R. MRP."
(Conservation Organization, Yosemite, CA, Comment #111-111)

Response: The National Park Services recognizes that the selection of specific indicators is an important step in the VERP process, and that it requires consideration of a number of factors which relate to the overall effectiveness of the indicator. Park staff determined that indicators must satisfy fourteen important criteria, which are described in Chapter II of this document. As park managers gain knowledge through field-testing the VERP, the indicators (and related standards) may be further refined. This iterative learning and refining process is one strength of the VERP program, in that it can be adapted and improved as further knowledge is gained. The National Park Service would inform the public of VERP program progress and proposed revisions to indicators and standards through the park's ongoing public involvement process. Taken collectively, the indicators (and standards) presented in the park's VERP program would provide sound information on the overall condition of important park resources, visitor experience opportunities, and the Merced River's Outstandingly Remarkable Values. In addition, the National Park Service's Inventory and Monitoring Program, which serves in part to inform the VERP program, is an integral program within the Resources Management and Sciences division in Yosemite and is designed to address many concerns related to special status or sensitive species within the park.

Concern 53: The National Park Service should expand its list of indicators to include all important indicators.

"Couple comments specifically on the plan. I do want to suggest that the indicators, this is no surprise I'm sure to the Park Service, are very, very important. It's important that we get this list as close to accurate as possible. Certainly, the fact that it's an organic process is not lost on any of us. The fact that as we gain more knowledge and information about what resource impairments might happen or how visitors experience this place, we'll be able to add to that list. But I would like to encourage the Park Service and others to make sure we have extensively listed the important indicators...One thing that's come up in the past is looking at air quality. Things in the air eventually hit the water."
(Individual, Oakland, CA, Comment #38-1)

"The proposed indicators and standards are too limited to adequately protect Merced River Outstandingly Remarkable Values. There are no proposed indicators and standards related to vegetation loss and alteration, wildlife health, air quality, etc. The NPS must include indicators for vegetation and wildlife health. How do we know visitation is not adversely affecting birds, aquatic invertebrate, and native vegetation, or increasing nonnative species density or distribution? How do we know visitation is not adversely affecting air quality, natural soundscapes, dark night skies?"
(Individual, Fresno, CA, Comment #82-29)

"We also believe it's important to look at the big picture as well as down at the site specific level. So tonight, Tom and I, as we were discussing how to describe it, we were describing it as a suite of indicators rather than just an indicator for the ecosystem along the river… And by having from the big picture down to the very site specific with a suite of indicators and then responding to those in appropriate fashion, you would be able to provide something that wasn't mixing the natural variability that occurs out there, but instead would be looking at the trend of responses caused by human actions."
(Individual, Twain Harte, CA, Comment #106-6)

Response: The National Park Services recognizes that the selection of specific indicators is an important step in the VERP process, and that it requires consideration of a number of factors which relate to the overall effectiveness of the indicator. Park staff determined that indicators must satisfy fourteen important criteria, which are described in Chapter II of this document. As park managers gain knowledge through technological improvements, field-testing VEP indicators, and increased knowledge of ecological systems; indicators (and related standards) may be further refined. In the future, additional indicators will be developed and implemented and the public will be informed as new indicators are field tested. This iterative learning and refining process is one strength of the VERP program, in that it can be adapted and improved as further knowledge is gained. The National Park Service would inform the public of VERP program progress and proposed revisions to indicators and standards through the park's ongoing public involvement process. Taken collectively, the indicators (and standards) presented in the park's VERP program would provide sound information on the overall condition of important park resources, visitor experience opportunities, and the Merced River's Outstandingly Remarkable Values.

Concern 55: The Revised Merced River Plan should set long-term ground rules defining and limiting allowable management actions.

"The final plan should set long-term ground rules defining and limiting allowable - management actions. The ground-rules should include all of the following; (a) a specific, maximum limit on number of users by area (river segment or management zone) per day, (b) a specific, maximum limit on number of users for the entire corridor per year, c) a specific, maximum limit on development of facilities. Tied to these limits there needs to be specificity as to what the Park Service will do if such limits end up being exceeded. While CSERC recognizes the value of VERP as a defined decision-making process, simply proposing a decision making process, without setting limits as to what can be decided and acted on, will not be accepted by the public. We believe that this is the message behind the Ninth Circuit Court of Appeals decision that requires "specific measurable limits on use."
(Conservation Organization, Twain Harte, CA, Comment #29-8)

Response: The Revised Merced River Plan documents the VERP process, including the process that park managers would use to evaluate and implement management actions needed to address protection and enhancement of the river's Outstandingly Remarkable Values. Because the Revised Merced River Plan is a programmatic document, it cannot predict and pinpoint what specific actions will be implemented in the future, as the actions taken will vary depending on the type and location of impacts that are identified. An action taken in one situation or in one area of the park may not be effective in another. Also, as conditions change, as technology changes, and as visitor use patterns change, management strategies must change accordingly. A review of recreation impact management literature documents that there is a wide range of measures that can be effective in reducing or mitigating visitor impacts on resources and visitor experience. Consequently, the measures selected must be based on the specific issues to be addressed. This type of decision-making criteria has been presented in Chapter II (under "Management Action Strategies and Tactics), which includes a list of questions managers would consider when defining and determining the type of action to take.

Concern 76: The Revised Merced River Plan should clarify how the quotas in Alternative 4 can be altered by Visitor Experience and Resource Protection.

"And my final comment is that, despite information given in tonight's presentation, as far as I know that quotas in alternative plan four can be raised if the VERP program decides to."
(Individual, Twain Harte, CA, Comment #34-10)

Response: The National Park Service recognizes this concern and has revised the Final Revised Merced River Plan/SEIS, where possible, to provide clarification of how the VERP component of Yosemite's User Capacity Management Program. As described in the document, use levels in each management zone have the ability to be reduced or increased as a result of VERP if monitoring shows that Outstandingly Remarkable Values are exceeding or meeting set standards. As a result of public comment, the annual corridorwide visitation limit could be reduced or increased, depending on result of VERP monitoring and would be subject to the appropriate level of National Environmental Policy Act review and public involvement.

Concern 123: The Revised Merced River Plan should establish specific limits on day and annual use and on facility levels.

"The [long-term] ground-rules [in the document] should include all of the following; (a) a specific, maximum limit on number of users by area (river segment or management zone) per day, (b) a specific, maximum limit on number of users for the entire corridor per year, c) a specific, maximum limit on development of facilities. ...We believe that this is the message behind the Ninth Circuit Court of Appeals decision that requires "specific measurable limits on use.""
(Conservation Organization, Twain Harte, CA, Comment #29-13)

"We share...[the Central Sierra Environmental Resource Center's] concern that proposing – or even finalizing – a decision-making process will not suffice in these circumstances. The public wants – and it appears that the law requires – specific limits on visitor numbers..."
(Conservation Organization, San Francisco, CA, Comment #71-2)

Response: The Revised Merced River Plan/SEIS has proposed a range of alternatives that provide specific limits on day, annual, and facility use. However, not all components are a component of each alternative. The National Park Service has proposed three action alternatives that prescribe different approaches for managing use.

Concern 145: The Revised Merced River Plan should consider a range of standards across the alternatives for [indicators].

"Why not consider a range of standards across the alternatives? For example, why not vary the crowding standards across the alternatives such as 9 encounters versus 6 per day, or 90% of the time versus 60%?"
(Individual, Fort Collins, CO, Comment #73-20)

"Why not consider a range of alternatives for the relevant standards list in the Superintendent's Compendium (e.g., party size)?"
(Individual, Fort Collins, CO, Comment #73-21)

"Rather than "no net increase" in your standards, why not some variation?"
(Individual, Fort Collins, CO, Comment #73-23)

Response: Because the Revised Merced River Plan/SEIS is a programmatic plan, the Visitor Experience and Resource Protection component of the Yosemite's User Capacity Management Program is presented as a method common to all action alternatives. (This is consistent with the approach taken in the 2000 *Merced Wild and Scenic River Comprehensive Management Plan/Final Environmental Impact Statement*). As more information is obtained through VERP monitoring, or if it is determined that particular indicators are not providing information about impacts to resources from visitor use, indicators and standards will continue to be refined. However, the National Park Service is committed to achieving and maintaining desired conditions, and avoiding degradation to the Outstandingly Remarkable Values of the Merced River. Alternative standards would imply alternative conditions were acceptable. This is why a "no degradation" from further conditions was selected as a standard for many indicators. The difficulty inherent in needing absolute precision and accuracy in carrying capacity determinations are remedied in the VERP model, which call for regular assessment and adaptations when warranted. In alternative, less flexible approaches, managers must adhere to preliminary judgments regardless of effectiveness.

Concern 149: The National Park Service should reconsider whether VERP implementation is realistic.

"I also think your confidence in VERP, its standards and indicators, the precision and accuracy of any field monitoring activity, or its budgetary requirements (which are not disclosed), is not realistic."
(Individual, Fort Collins, CO, Comment #73-27)

Response: The National Park Service has adopted the VERP framework for managing visitor use impacts in national parks. VERP has been implemented in multiple parks throughout the National Park System and it continues to be refined and improved. Yosemite National Park has launched its VERP program and has committed funding to ensure its successful implementation into the future. The VERP framework helps define the types and levels of visitor use that can be accommodated while sustaining the desired resource and social conditions that complement the purpose of the park units and their management objectives. The VERP framework also provides a systematic process for taking informed actions to manage all of the elements of visitor use that may influence desired conditions and the river's Outstandingly Remarkable Values.

Concern 155: The Revised Merced River Plan should illustrate how VERP will differ from existing park management practices.

"More specifically, I think it would be very useful to the reader if you would provide a description of what would be different if VERP was not used. That is, what does VERP bring to the Merced WSR SEIS that is new, value added, or would not otherwise be done as routine in good professional park planning, management, monitoring and adaptation.

For example, would management zones have been developed without VERP? Would indicators and standards have been established without VERP? Would monitoring take place without VERP? Would adaptive changes in management tools occur without VERP? ... I am concerned that the decision maker and public may get the impression that VERP brings something substantively and meaningfully different than what has been practiced by the Park in the past, or that would not otherwise be done in the future as a matter of course of good professional park planning, management, monitoring and adaptation."
(Individual, Fort Collins, CO, Comment #73-34)

"In Alternative 1, VERP is not included and was not used in the past to arrive at the current situation. What program or process did you use in the past to derive the management zones and standards set forth in alternative 1, and why can't this process be used in the future? Won't you still use management zones, standards such as Superintendent's Compendium, monitoring, and adaptation as necessary in Alternative 1? My point is that I think the decision maker and public will have a difficult time understanding and evaluating the comparable merits and substantive difference between 1 and the other alternative in terms of not using VERP."
(Individual, Fort Collins, CO, Comment #73-35)

Response: As described in Chapter II (under "Yosemite National Park's Existing User Capacity Management Program"), implementation of VERP will improve on existing management practices. Yosemite National Park already uses a number of measures to address user capacity and visitor use impacts on park resources and visitor experience. Implementation of VERP will provide managers with more consistent and timely information to track the on-the-ground condition of Outstandingly Remarkable Values. The VERP process will also provide feedback to managers regarding the effectiveness of measures taken to address any impacts noted. One of the most dramatic differences, however, will be in the firm commitment to specific standards and to an open public process that results in accountability to these commitments.

Concern 170: The National Park Service should develop and set daily quotas based them on a scientifically based and well developed Visitor Experience and Resource Protection program.

"Clearly, a well-developed and scientifically based VERP program also is needed to ensure the daily quotas are set at a level that will not degrade Outstandingly Remarkable Values."
(Individual, Fresno, CA, Comment #82-7)

Response: The VERP component of Yosemite's User Capacity Management Program allows for management of the river corridor based on resource conditions and visitor experience. Once fully operational, the results of VERP monitoring will ultimately dictate the level of visitor use that an area or site can be exposed to and still ensure protection and enhancement of the river's Outstandingly Remarkable Values.

Concern 174: The Revised Merced River Plan should clarify what it means for VERP to be fully operational and/or fully implemented.

"What does it mean for VERP to be fully implemented, or fully operational, or refined and implemented, or robust? Won't VERP be implemented indefinitely? This should be clarified.
(Individual, Fresno, CA, Comment #82-11)

Response: The VERP process relies on using the best scientific methods (1) to establish indicators and appropriate standards, (2) to develop appropriate monitoring protocols for data collection, (3) to evaluate the information gathered through monitoring, (4) to determine the most appropriate and effective actions to address issues identified, (5) and to evaluate the effectiveness of these actions. Because the VERP process is a type of adaptive management, each round of monitoring and evaluation is refined and improved based on increasing knowledge. In particular, some indicators and standards or monitoring methods will be found to not provide valid or useful information during initial field tests. Thus, it is likely to take up to 5 years to sufficiently establish, field test, and refine the VERP program. Even after this time, the program will continue to be improved and refined as knowledge is gained.

Although the program will continue to be refined over time, consistent with adaptive management programs, some indicators are already providing useful information and other will provide useful data in the near future. The VERP program will be considered to be fully operational or fully implemented when (1) the program is found to be providing timely and consistent information to management on the condition of the river's Outstandingly Remarkable Values, and (2) park managers are able to use that information to inform decisions related to visitor use management within the river corridor. Although this could occur prior to the 5 year mark, the National Park Service has decided to commit to leaving the interim facility limits in place for 5 years and to provide information to the public on how VERP is providing effective information on use management prior to lifting the interim limits.

Concern 182: The "Number Of Social Trails" indicator in the Revised Merced River Plan/SEIS should be redeveloped to include baseline standards higher than 2004 conditions and should be consistent across management zones.

"The Number of Social Trails indicator does not (as the Draft SEIS states) reflect the health of sensitive vegetation. It reflects only the extent (area) of trampled or pulverized vegetation (that may or may not be native vegetation), or bare soil within a small area. Further, the standard for this indicator is based on a subjective determination that the number and length of such trails as they existed in 2004 was acceptable. Why is 2004 used as the baseline for social trails? By what standards was the number and length of social trails existing in 2004 deemed "acceptable?" Perhaps there already were too many trails that were too long in 2004. Why is this indicator not consistent across zones? For some it is number of social trails, for others it is length of social trails. More work should be done to establish the number and length of trails that truly is acceptable, and this should be based on both resource values and aesthetics.
(Individual, Fresno, CA, Comment #82-22)

Response: Although the National Park Service has aerial photographs of Yosemite Valley's meadows, statistical data was not available prior to 2004 when the "Number of Social Trails" indicator was initially monitored by park staff. The park's Visitor Experience and Resource Protection program gathered data for this indicator in 2004 to determine a baseline for triggering management action. The monitoring results for the "Number of Social Trails in Meadows" VERP indicator can be found on the park's web site (*www.nps.gov/yose/planning/ucmp.htm*).

Concern 183: The "Wildlife Exposure to Human Food" indicator in the Revised Merced River Plan should include a range of wildlife species.

"The Wildlife Exposures to Human Food indicator does not reflect health of wildlife resources (as the Draft SEIS states), it only reflects numbers of a relatively small number of species that are exposed to, or eat human food. This is a good and important thing to measure, but it is misleading to state that it will reflect the health of wildlife resources. A range of wildlife species, such as aquatic invertebrates, should be monitored directly."
(Individual, Fresno, CA, Comment #82-23)

Response: The National Park Service's "Wildlife Exposure to Human Food" indicator will take into consideration all of Yosemite's wildlife species; however, bears are particularly adept at getting human food.

Concern 184: The "Riverbank Erosion" indicator should be reassessed to determine if the 2005 baseline conditions set for the indicator are scientifically acceptable.

"The standards for Riverbank Erosion are based on a 2005 baseline. This assumes that the situation that existed in 2005 was acceptable and adequate to protect Outstandingly Remarkable Values. Are there any data to support this assumption? The standards for this indicator should be subject to peer review by both governmental and non-governmental experts. Standards developed to protect natural resources in Merced River Outstandingly Remarkable Values in perpetuity must be grounded in science. If scientific data are not available for establishment of standards, studies to acquire such data must be pursued, and no increase in visitation should occur until the data indicate such an action would not harm Outstandingly Remarkable Values."
(Individual, Fresno, CA, Comment #82-24)

Response: Although the National Park Service has numerous historic photographs of the presence/absence of vegetation along sections of the river corridor, statistical data was not available prior to 2005 when the "Extent of Riverbank Erosion Caused or Accelerated by Visitor Use" indicator was initially monitored by park staff. The National Park Service believes that setting the baseline for this indicator at 2005 conditions is scientifically acceptable VERP is designed to monitor impacts on resources caused by visitor use, not natural variation such as the 1997 flood event that caused extensive riverbank erosion through the entire Merced River corridor.

Concern 185: The standards set for the "Water Quality" indicator in the Revised Merced River Plan/SEIS should be clarified and a peer-review monitoring program should be established.

"The standards for Water Quality are self-contradictory and confusing. What does anti-degradation mean? It is assumed to mean no degradation from present conditions, but later the standard says there is an "absolute minimum" related to state fecal coliform levels. Which is it? No degradation or the absolute minimum? Please clarify water quality standards and develop a peer-reviewed monitoring plan."
(Individual, Fresno, CA, Comment #82-27)

Response: The standard the National Park Service set for the park's "Water Quality" indicator has previously been peer-reviewed, as they and are in accordance with State Drinking Water Standards. In addition, the National Park Service is basing monitoring methodologies on the U.S. Geological Survey's nationally accepted methods and procedures. The first year of data indicates that water quality along the Merced River corridor is much better than state drinking water standards. Therefore VERP water quality data will be collected for several years to set a baseline numbers for current condition. Standards will be set so that there will no any degradation of current condition.

Concern 188: The National Park Service should establish scientifically credible indicators and standards based on a peer-reviewed set of desired conditions for both resources and visitor experience within the Merced River corridor.

"To protect Merced Wild and Scenic River Outstandingly Remarkable Values, the NPS should...establish a peer-reviewed set of desired future conditions for both resources and visitor experiences within the river corridor (independent of existing MRP zoning)."
(Individual, Fresno, CA, Comment #82-32)

"To protect Merced Wild and Scenic River Outstandingly Remarkable Values, the National Park Service should...develop a scientifically credible set of indicators and standards to determine if numbers of people and patterns of use are continuing to degrade resources and visitor experiences, or are allowing conditions to improve toward the desired set of conditions established in #3 above."
(Individual, Fresno, CA, Comment #82-33)

Response: In 2003, the National Park Service assembled a team of technical experts, including park staff and scientists, to develop, the first set of indicators and standards for Yosemite's Visitor Experience and Resource Protection program. Indicators were peer-reviewed by an interdisciplinary team of park staff. Additionally, a series of workshops was conducted to further develop a comprehensive list of indicators that would provide information about impacts to resources caused by visitor use. The National Park Service is committed to reporting VERP results to the public through quarterly updates (public meetings and/or newsletters) and a written annual report.

Concern 201: The National Park Service should wait for 5 years of Visitor Experience and Resource Protection data prior to implementing new or future projects.

"If indeed this Revised River Plan establishes a 5 year study period during which baseline data is gathered and measurable standards and indicators are being developed and tested, then ALL FOLLOW-ON PLANS SHOULD BE PUT ON HOLD until the conclusion of that time frame. When the Park is confident that the VERP program is providing sound guidance on appropriate visitor use levels (something the Park claims will take up to 5 years), this Revised River Plan states that a fully documented report will then be released. That report should be the foundation for a Revised Merced River Plan that will then undergo fill public review. If found to be acceptable, that document should be the basis for the ROD. Once an ROD is in place, all tiering plans such as the Yosemite Valley Plan, the Curry and Lodge Eas, etc. should be reexamined in light of this "developed-over-5-years" VERP program. Yet a review of Appendix F, "Potential Cumulative Actions," implies there will be no hold on any of the projects specified in the Yosemite Valley Plan; numerous Eas and environmental compliance documents (categorical exclusions?) will be developed and released in 2005--the same year in which the Park plans to sign the ROD for this non- Plan. The public is led to believe that all the hoopla about interim facility limits and five-year study programs will enable the Park to make sure the Merced River Corridor is protected--essentially a long pause that will enable Park managers to get it right. The reality is that as soon as the ROD is signed, it's full steamahead. How can the Park reexamine any follow-on project in earnest when trees have already been logged, facilities have already been constructed, roads have already been realigned, traffic circulation has been reconfigured, visitation patterns have been altered? This Plan is pre-decisional—a blatant manipulation of the court order--enabling Park administrators to carry forward their pre-determined agenda."
(Individual, Oakhurst, CA, Comment #55-13)

"In case you do not agree with the…rationale for a moratorium, [of construction projects during the "interim period"] consider the fact that the courts enjoined most new construction pending the completion of the DRMRP process. Also, they said that interim protections should be put in place until more permanent methods of protection could be made operational. If the outcome of this planning process will have no bearing on whether or not the enjoined projects should proceed, then why was the injunction issued in the first place? Also, why does the NATIONAL PARK SERVICE intend to proceed with construction even though VERP (or other methods) will not be fully operational? The courts seem not to agree with your proposed course of action."
(Conservation Organization, Fresno, CA, Comment #113-16)

"There is a level of distrust that seems to have developed between the NPS planners and some residents of El Portal. This has arisen, unfortunately, due to certain projects being pushed through before plans such as the MRP are finalized. I am not against all changes in El Portal and in YNP, but I would like to feel that I can trust the NPS to be following the laws set out with the best interests of YNP in mind. There is a feeling that some plans are pushed through so that they can be accomplished before the law catches up with the project (such as the road widening and the lower falls project). I hope that no other plans that should be under the jurisdiction of this plan are implemented until the MRP is finalized. I also hope that this DRMRP has been constructed with the sole interest of "protecting and enhancing the river" and not been drafted in order to be consistent with the other park plans that actually should have been made after this plan was completed."
(Individual, El Portal, CA, Comment #120-11)

Response: Prior to undertaking and projects within or adjacent to the Merced River corridor, the National Park Service will evaluate the project to determine whether it complies with the elements of the Merced River Plan, as revised through this plan. This determination will include an assessment of whether the project will protect and enhance the Outstandingly Remarkable Values of the Merced River. For projects that have already undergone environmental review and public comment (e.g., the Lodge Area Redevelopment Project), the National Park Service will make the results of this re-evaluation publicly available. For projects that have not yet undergone environmental review, the National Park Service will include this evaluation as a part of the National Environmental Policy Act planning process for such projects.

The Merced River Plan has been developed using relevant and available data from many natural, cultural, social and other studies, which serve as baseline information. These studies are referenced in the plan, can be found in the bibliography, and are available upon request. The National Park Service information to determine if previously approved or future actions will or will not affect the Merced River's Outstandingly Remarkable Values. With this in mind it is important to note that the foundation of all action alternatives in the Revised Merced River Plan/SEIS, including the preferred alternative, *is* the protection and enhancement of the Merced River's Outstandingly Remarkable Values. Therefore, all future management actions, as well as actions approved in previous plans, will be guided by this principal regardless of when they are implemented.

It is true that the National Park Service has begun collecting additional baseline data and is conducting resource monitoring associated with Yosemite's VERP program. This information will supplement the existing body data and information.

Concern 219: The National Park Service should reevaluate the use of the Visitor Experience and Resource Protection framework in light of the fact that the National Park Service was unable to meet the original goal of implementation in 5 years, set in 2000.

"We have the same concerns about VERP as we had before as to its inadequacy. We herein incorporate those concerns that we stated in our public comments and in our filings to the court. We herein incorporate the comments Glenn Haas, an expert on user capacity which he sent in to NATIONAL PARK SERVICE as a part of this public comment period. NPS said 4 yrs ago it would take them 5 years to do VERP, and now 4 years later they are saying the same thing, that it will or might take another 5 years."
(Conservation Organization, Yosemite, CA, Comment #111-70)

Response: Yosemite National Park is committed the fully implementing a User Capacity Management Program that includes the VERP process as a key component. As part of this commitment, a VERP coordinator position has been created and filled. Additionally, funding has been secured for the next 5 years to implement the VERP program. Park resource managers have developed a set of initial indicators and standards as part of its *User Capacity Management Program for the Merced Wild and Scenic River Corridor* (NPS 2004a). The first year of monitoring was completed in 2004. In April 2005, the first annual report documenting the results of the 2004 program was posted on the park's web site and a public meeting was held to share program results.

The park has determined that Alternatives 2, 3, and 4 as presented in this document are all feasible from a cost and implementation standpoint. However, each alternative has various constraints and complexities with regard to implementation, as documented in the environmental analyses (Chapter V), particularly with regard to the visitor experience and park operations.

Concern 239: The National Park Service should manage meadows to reduce the number of undeveloped social trails.

"I expect much fewer undeveloped trails "lace working" the meadows."
(Individual, Mariposa, CA, Comment #87-4)

Response: The National Park Service has adopted the Visitor Experience and Resource Protection (VERP) program as a component of Yosemite National Park's User Capacity Management Program. VERP establishes a framework for monitoring indicators in order to assess how visitor use is adversely impacting either the resource condition or visitor experience. The National Park Service has, and will continue to monitor both the "Number of Social Trails in Meadows" and the Length of Social Trails in Meadows" to determine the cause and effect relationship between visitor use of these areas with the development of social trails. Depending on monitoring results of these two indicators, a number of management actions could be implemented to reduce the number of social trails from developing and will be determined by park management.

Concern 358: The National Park Service should compare human-encounter based indicators and standards with those at other national parks.

"We also find the specific human encounter-based indicators and standards used in the Merced Wild and Scenic River Management Plan to be inconsistent with the approaches used by other national parks and forests...we find the following: Rocky Mountain National Park, with 11.0 recreational visitors per acre, effectively does not regulate human encounters to protect wilderness solitude. Yosemite National Park, with 4.3 recreational visitors per acre, will allow only one encounter with another party in its most restrictive wilderness zone to protect solitude. Meanwhile, Denali National Park and Preserve, with a mere .07 recreational visitors per acre, allows a wilderness encounter level in its most restrictive wilderness zone roughly twice that allowed in Yosemite. If there is any correlation between actual solitude (as defined in recreational visitor per acre) with the way these three national parks manage human encounters, it is not readily apparent."
(Business, San Rafael, CA, Comment # 112-11)

Response: The National Park Service has adopted the Visitor Experience and Resource Protection (VERP) program as a component of Yosemite National Park's User Capacity Management Program. VERP establishes a framework for monitoring indicators in order to assess how visitor use is adversely impacting either the resource condition or visitor experience. Because VERP is iterative and has the flexibility to be revised over time to improve the science behind the decision making, new information will continue to be reviewed by the National Park Service.

As part of the development of the overall User Capacity Management Program, the park's planning team consulted with managers at other national parks, as well as with several nationally recognized VERP experts regarding the development and use of VERP indicators and standards. Information gained for these sources was fully considered in the development of specific program elements at Yosemite National Park.

Concern 361: The National Park Service should understand that not all users have negative impacts on resources and should address how inexperienced recreation user groups impact resources.

"While the Merced Wild and Scenic River Management Plan aims to protect the river's natural resources from human-caused harm, it similarly appears inconsistent in the way that the indicators and standards focus proposed VERP management actions in Table II-8. We fully realize that the examples given are merely theoretical, and that the VERP framework will allow you to more accurately track environmental impacts and diagnose the likely causes of damage. Nevertheless, these proposed management actions exhibit biases we find concerning and worthy of noting."
(Business, San Rafael, CA, Comment #112-14)

"Scientific studies on human-caused environmental impacts tend to point out that uninformed and inexperienced visitors disobeying rules are responsible for more environmental impacts than their more informed and experienced counterparts who follow the rules…From our observations the greatest direct impacts directly affecting the Merced River are caused by casual tourists—usually ill informed about the natural environment and the damage their actions can cause."
(Business, San Rafael, CA, Comment #112-15)

"However, the proposed management actions often frequently discuss ineffective macro-level approaches like "limit overall numbers of users" through reduced entrance station quotas or reduced wilderness trailhead quotas, or they seek to permit, regulate and limit access by specific recreational visitors including rafters, climbers and hikers. It is our experience that the more experienced recreationists are very familiar with the Leave No Trace principles of their sport (i.e. boaters using beaches or rocks for ingress/egress), or, in the case of climbers, rarely if ever even approach the river environment directly."
(Business, San Rafael, CA, Comment #112-16)

Response: The National Park Service has adopted the Visitor Experience and Resource Protection (VERP) program as a component of Yosemite National Park's User Capacity Management Program. VERP establishes a framework for monitoring indicators in order to assess how visitor use is adversely impacting either the resource condition or visitor experience. The National Park Service recognizes that impacts to resources and the visitor experience can be caused by many different factors including varied types of activities and facilities, varied use levels, as well as natural processes.

Concern 372: The National Park Service should use the Visitor Experience and Resource Protection framework to measure the impacts of both the physical presence of humans and the presence of infrastructure on the Outstandingly Remarkable Values.

"When we asked why construction would proceed in the absence of information intended to show whether it would be appropriate, we were told that VERP is intended only to measure human impact. That would include coliform bacteria in the river, degraded meadows, crowds at viewpoints, too many drivers looking for too little parking, and such. It would have nothing to do with determining the appropriateness of offices, lodging, campgrounds, retail outlets, food service, roads, utility lines, or other construction projects.

In other words, we were told there was a complete separation of human impacts from the impacts of the infrastructure which goes along with those humans, and that this DRMRP process addresses only the former.

We do not agree that the only impacts that should be addressed are those caused by the physical presence of human beings. The more people there are, the more infrastructure is required to support their presence. Impacts of infrastructure clearly can affect the Outstandingly Remarkable Values (ORV's) along the Merced River, and should be addressed. It should be an integral part of addressing user capacity."
(Conservation Organization, Fresno, CA, Comment #113-14)

Response: The National Park Service has adopted the Visitor Experience and Resource Protection (VERP) program as a component of Yosemite National Park's User Capacity Management Program. VERP establishes a framework for monitoring indicators in order to assess how visitor use is adversely affecting either the resource condition or visitor experience. The National Park Service recognizes that impacts to resources and the visitor experience can be caused by many different factors including varied types of activities and facilities, varied use levels, as well as natural processes.

Concern 377: The National Park Service should consider a "Number of Vehicles on Roads vs. Capacity of Roads" Indicator in order to determine appropriate management actions to address traffic congestion.

"TRAFFIC CONGESTION: Consider traffic congestion. To a considerable extent this is the issue which has been foremost in much of the planning for Yosemite Valley, including the river corridor. It has been the reason given for closures of the Park and of the east end of Yosemite Valley. It is being used as the primary excuse for relocating Northside Drive around the south side of Yosemite Lodge. Yet there is no Indicator for "Number of Vehicles on Roads vs. Capacity of Roads." This is not the same issue as "Occupied Parking vs. Capacity." You can and do have parking spaces available when there is congestion on the roads. It happens when everyone tries to leave the Valley at the same time. Parking is available because people are leaving, but the roads are congested. It is two different issues, and you are measuring the wrong one. We request that one Indicator be "Number of Vehicles on Roads vs. Capacity of Roads."
(Conservation Organization, Fresno, CA, Comment #113-23)

"The remaining argument [to realign Northside Drive] made openly is that realignment of Northside Drive is needed to prevent traffic from backing up as a result of pedestrians crossing to get to the Lower Fall. So it gets down to numbers of people, numbers of vehicles, and the timing of both. It also raises questions as to whether it makes sense to try to engineer or build our way out of congestion problems. Or whether we should be looking at other solutions which do not involve major new impacts. That "look at other solutions" is required by NATIONAL PARK SERVICE regulations, as well as common sense. But it doesn't seem to be happening. We raise the issue now because we requested (above) a new Indicator: "Number of Vehicles on Roads vs. Capacity of Roads." Such an Indicator might lead to the conclusion that there were too many vehicles at particular times. If your "management action" conclusion were to be that more new roads should be built in order to speed up traffic, we would contest it vigorously. And we doubt that the general public sees moving traffic quickly through Yosemite Valley as being an important consideration in determining the quality of their visit. But, in the absence of the Indicator, the opportunity for that discussion will not offer itself."
(Conservation Organization, Fresno, CA, Comment #113-25)

"The proposed relocation of Northside Drive is a solution in search of a problem. Any rational process would have looked at it in the context of the DRMPR. Your failure to address it is a direct consequence of your failure to address the issues of numbers of people and numbers of vehicles and whether those numbers have any relationship to congestion. To ignore the court direction to address user capacity, and instead to attempt to build your way out with a new high speed highway in the river influence zone, is a gross violation of due process. It is probably also illegal."
(Conservation Organization, Fresno, CA, Comment #113-26)

Response: The National Park Service has adopted the Visitor Experience and Resource Protection (VERP) program as a component of Yosemite National Park's User Capacity Management Program. VERP establishes a framework for monitoring indicators in order to assess how visitor use is adversely impacting either the resource condition or visitor experience. Because VERP is iterative and has the flexibility to be revised over time to improve the science behind the decision making, new information will continue to be reviewed by the National Park Service, including the potential adoption of new indicators and/or standards.

The National Park Service has recognized that traffic congestion has implications to the overall visitor experience, can contribute to the degradation of some of the river's Outstandingly Remarkable Values, and can also affect vehicle and pedestrian safety. The indicator of "Occupied Parking versus Capacity" has a direct relation to the number of vehicles on roads, in that if vehicle parking can be accommodated, then roadway and intersection congestion will be minimized, especially during peak visitation periods. If monitoring the number of vehicles in any activity area at any one time indicates that existing parking capacity is being exceeded, park managers will implement appropriate management actions (see list of potential management actions in Chapter II) to ensure that congestion on roads is minimized and related Outstandingly Remarkable Values in affected areas are protected.

Concern 382: The Revised Merced River Plan should consider that measuring impacts on resources will be difficult to measure because there are over 300 species of wildlife and even more plant species in the park.

"It [analyzing the effect of humans on the web of life] is much more difficult to measure because there are more than 300 wild life species and even more plant species that somehow have to be considered."
(Individual, Twain Harte, CA, Comment #106-1)

Response: The National Park Services recognizes that the selection of specific indicators is an important step in the VERP process, and that it requires consideration of a number of factors that relate to the overall effectiveness of the indicator. In selecting indicators, park staff determined that indicators must satisfy fourteen important criteria, which are described in Chapter II of this document. Although this document only addresses the river corridor, the indicators and standards developed for this effort have been designed to be applicable to the park as a whole, As the VERP program continues to develop and evolve over the years, the overall goal will continue to be to protect all of the parks natural and cultural resources in a manner that best balances the preservation and enhancement of those resources with the overall visitor experience.

Concern 383: The National Park Service should separate out the effects on indicators caused by humans and those that are caused by natural variation.

"And even if you acknowledge that certain species should be the focus, your challenge is then to separate out the effects of humans on those indicators, if that's -- if they become indicators -- from the natural variation of weather, of habitat, of crenation, et cetera."
(Individual, Twain Harte, CA, Comment #106-2)

Response: The National Park Services recognizes that the selection of specific indicators is an important step in the VERP process, and that it requires consideration of a number of factors that relate to the overall effectiveness of the indicator. In selecting indicators, Park staff determined that indicators must satisfy fourteen important criteria, which are described in Chapter II of this document. One of these is that the indicator must be "related to use levels, behaviors or patterns." This criterion will help to ensure indicators focus on evaluating the effects of visitor use on a specific resource or location and not on those effects that are cause by natural variation. If impacts are discovered during monitoring, staff will conduct further investigation to determine the root cause of these impacts.

Concern 384: The National Park Service should conduct an analysis of streambank stability along the entire Merced River corridor in the Valley every other year.

"At an even broader level, there might be an analysis of stream bank stability along the entire river corridor valley done every other year or something, which is not that difficult to do. You have staff that could clearly do it. But it would provide a more of a big picture."
(Individual, Twain Harte, CA, Comment #106-7)

Response: The National Park Service Resources Management and Science Division currently has programs in place to address streambank stability. As part of ongoing observation, several streambank stabilization projects in the Merced River corridor have been completed over recent years, including at Eagle Creek.

Concern 427: The National Park Service should consider indicators and standards from a broader range of resources.

"There are no standards or indicators for preservation of the Scientific ORV or the Geologic Processes ORV."
(Individual, Oakhurst, CA, Comment #55-7)

"[W]hy isn't air quality an indicator for VERP?"
(Individual, El Portal, CA, Comment #109-6)

"RAFTING: Consider rafting. We have heard a number of comments about the negative impacts of rafting activity. In looking at the indicators, it is not at all clear that any of them will address this. For example, in Table II-8, page II-41, Zone 2A Open Space, an Indicator is "Actual Number of People Recreating Within the River Protection Overlay." It says if the Standard is exceeded there might possibly be a restriction of "fishing, picnicking, swimming, etc." Nothing is said about rafting. Even if rafting were listed, there is no clear commitment to a management action which would do something about the problem. In Table A-1, pages A-2 through A-7, we cannot find rafting listed as an activity for any Management Zone, even though swimming, wading, and fishing are listed. We request that one Indicator be "Number of Rafts vs. Capacity", because that appears to be the only way to have any assurance that the problem will be addressed."
(Conservation Organization, Fresno, CA, Comment #113-22)

Response: The National Park Services recognizes that the selection of specific indicators is an important step in the VERP process, and that it requires consideration of a number of factors that relate to the overall effectiveness of the indicator. In selecting indicators, park staff determined that indicators must satisfy fourteen important criteria, which are described in Chapter II of this document. Although this document only addresses the river corridor, the indicators and standards developed for this effort have been designed to be applicable to the park as a whole. Based upon monitoring results, the National Park Service will determine whether a particular indicator is capable of providing information to park managers about impacts to resources or the visitor experience caused from visitor use. The National Park Service has the ability to expand or reduce the number of indicators being monitored in a given season, or monitor different indicators in different seasons. VERP is a dynamic, iterative process that requires refinement of indicators and standards over time, making it likely that the park will continue to monitor new and/or refined indicators. As the park continues to monitor VERP indicators, the scientific Outstandingly Remarkable Values of the river corridor are enhanced through the additional scientific understanding of river values. For information from the 2004 VERP monitoring season, visit the park's web site (*www.nps.gov/yose/planning/ucmp.htm*).

Concern 445: The Revised Merced River plan should use Outstandingly Remarkable Values as the primary criterion for the development of standards and indicators.

"It's interesting to note that in describing meetings held to develop criteria for standards and indicators a list of 14 items is presented in this document; dead last on the list--"connected to the Outstandingly Remarkable Values" (page 11-48). That must be the primary criterion, not an afterthought?"
(Individual, Oakhurst, CA, Comment #55-9)

Response: The National Park Service recognizes this concern and will continue place priority on Outstandingly Remarkable Values during the development of standards and indicators within the Merced Wild and Scenic River corridor. However, because the National Park Service is implementing the VERP program parkwide, many other factors will be taken into consideration when selecting standards and indicators for the diversity of ecosystems with Yosemite National Park.

Concern 455: The National Park Service should withdraw the current plan and rewrite it following a 5-year interim study period which includes reevaluating all management elements to form the basis for the Record of Decision.

"We strongly support the concept of a 5-year interim study period with the following conditions: That the study period be viewed as a time to gather baseline data, develop and field test indicators and standards, and design/test/implement a clearly defined comprehensive resource monitoring program to guarantee protection of the Merced River Outstandingly Remarkable Values. Also conduct sociological studies that scientifically support visitor use planning assumptions including recreational patterns of low income and non-Anglo populations, visitor attitudes, etc. Results of this 5- year effort will become the foundation for a real Revised River Plan that would then be released to the public for formal review. It would be this 5-years-from-now document that would become the basis for the Record of Decision."
(Individual, Oakhurst, CA, Comment #55-54)

"[We strongly support the concept of a 5-year interim study period with the following conditions:]...That the scope of the 5-year interim effort be broadened to include review of all of the management elements and their integral relationship to user capacity."
(Individual, Oakhurst, CA, Comment #55-55)

Response: In October 2003, the U.S. Ninth Circuit Court of Appeals stated that the "Merced Wild and Scenic River Comprehensive Management Plan (CMP) is invalid due to two deficiencies: (1) a failure to adequately address user capacities; and (2) the improper drawing of the merced River's boundaries at El Portal. " In April 2004, the same court clarified its original opinion, stating that the National Park Service "must prepare a new or revised CMP that adequately addresses user capacities and properly draws the river boundaries in El Portal." The Revised Merced River Plan/SEIS was prepared in accordance with direction from the court, namely to readdress the two issues identified as being deficient. The National Park Service subsequently made a commitment to the court to complete this revision process in a one-year timeframe. Abandoning the planning effort in order to take additional time to collect data—in the absence of an approved user capacity program—would not be in keeping with the direction of the court to provide a "concrete measure of use."

Concern 458: The National Park Service should allow for flexibility in management actions to potentially allow for the reduction of private automobile traffic and an increase in bus parking and quotas.

"We therefore suggest that in formulating management actions to be taken under VERP, some flexibility be provided to allow for the reduction of private automobile traffic and a commensurate increase in bus parking and/or bus quotas should visitor preferences change."
(Business, Castroville, CA, Comment #118-5)

Response: The National Park Service has adopted the Visitor Experience and Resource Protection (VERP) program as a component of Yosemite National Park's User Capacity Management Program. VERP establishes a framework for monitoring indicators in order to assess how visitor use is adversely impacting either the resource condition or visitor experience. Because VERP is iterative and has the flexibility to be revised over time, the types of management actions that could be implemented will be determined based on whether the management action is appropriate to address an exceedance of a particular standard, such as traffic congestion and management.

Special Land Designations

Concern 250: The Revised Merced River Plan should recognize that the Merced Wild and Scenic River is part of a common heritage belonging to all people.

"The Merced River is a precious part of our common heritage and our common legacy. The National Park Service does not own the Merced River; the concessioner, Delaware North Corporation, does not own the Merced River; the people of the United States--as our common trust and responsibility--owns the Merced River; and in its protection lies our enjoyment. Or as Chief Seattle better put it, "The Earth does not belong to us, we belong to the Earth.""
(Conservation Organization, Yosemite, CA, Comment #111-13)

Response: The Wild and Scenic Rivers Act of 1968 was established to preserve the free-flowing condition of America's rivers—along with their immediate natural environments—for the benefit and enjoyment of future generations. The Merced River is as central to Yosemite National Park as its granite domes and spectacular waterfalls. When it was designated as a Wild and Scenic River in 1987, the Merced River joined a legion of special places unique in the nation. Central to its mission, the National Park Service recognizes that parks are places where all can experience America's heritage. The National Park Service has a duty to all who come to Yosemite to protect and enhance the Merced River's "Outstandingly Remarkable Values" for the benefit and enjoyment of people today—and for future generations.

Concern 125: The National Park Service should re-evaluate the recreational designation of the El Portal segment of the Merced Wild and Scenic River for a scenic designation.

"I have a few things to say. One is to ask the planning team to re-evaluate, and it sounds like they're already re-evaluating the designation of the El Portal segment as scenic or recreational, just to revisit that question. I learned from tonight from Mark that the forest came up with the original designation as recreational not scenic, because this segment was determined to be just like similar segments of the Yuba or the American or the Tuolumne, et cetera, so it was left out. It was said, it's not unique enough, not regionally or nationally significant enough to be called a scenic stretch of river."
(Individual, El Portal, CA, Comment #35-1)

"Re-evaluate the "scenic" vs. "recreational" designation of the Merced River in El Portal..."
(Individual, El Portal, CA, Comment #132-3)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues.. What distinguishes and classifies "wild", "scenic" and "recreational" segments of a river is clearly established by the Wild and Scenic Rivers Act. Accordingly the El Portal segment was classified as recreational based on its existing level of development. A detailed description of river classifications is presented in the 2000 Merced River Plan.

Outstandingly Remarkable Values

Concern 70: The National Park Service should consider a Scenic Outstandingly Remarkable Value in El Portal.

"What concerns me about that is I looked at all the other outstanding remarkable values for El Portal area like biological, culture, et cetera, et cetera, and if you look at all those, they are found all over the place too, like there's bedrock mortars and pounding rocks in every canyon up and down the foothills, but cultural significance or archeological significance got put into the El Portal stretch, and biological significance, you see the slide of the live oaks in the side canyons. There's live oaks in side canyons up and down the foothills. So a whole bunch Outstandingly Remarkable Values, that made it into El Portal's designation as being significant, scenic got left out because it was said to not be unique."
(Individual, El Portal, CA, Comment #35-3)

"The Merced River in El Portal clearly is scenic, so this Outstandingly Remarkable Value should be included in planning for the El Portal river segment. The canyon is one of the few remaining wild river corridors in the state, and its spring show of redbuds, poppies and other wildflowers is stunning. Oak trees, which have largely disappeared from their once-wide swath of California, spread across the steep hillsides here. The roaring whitewater and the gorge's green walls are the gateway to Yosemite, and development along the river would impair the majesty of this entrance. NPS has an opportunity in El Portal to take ethical high ground by protecting the scenery and finding a sustainable and unobtrusive way to provide housing and administrative buildings."
(Individual, Comment #81-14)

"Views from the Merced River and its banks in El Portal (and from above the canyon looking down) offers unique river features, spectacular rapids among giant boulders as well as exemplary views of Chinquapin Fall and the spectacular granite of Parkline Slabs; I am still puzzled as to why the NPS has failed to recognize this section of the river corridor as having "scenic" Outstandingly Remarkable Values."
(Individual, El Portal, CA, Comment #109-12)

Response: The Final Revised Merced River Plan has been prepared to address the Court direction, which was to revise the Merced River Plan to address user capacity and to define the boundary in the El Portal segment based on the Outstandingly Remarkable Values. The Court did not direct the National Park Service to reexamine the other elements of the Merced River Plan, as adopted in 2000. However, the revised river boundary for El Portal does provide for more restrictive zoning along the majority of the south side of the river. This more restrictive zoning will help to preserve the scenic qualities that currently exist in portions of this area.

Concern 86: The National Park Service should consider climbing as part of the Recreation Outstandingly Remarkable Value.

"One thing we're concerned about is to make sure the Park Service realizes that although I'm commenting as a climber, as climbers we believe climbing is another very valuable recreational activity that's done in the river corridor. When you're talking about outstanding and remarkable values applying to the corridor, climbers are involved as well, even if we're not in the river mark. And lots of people know this. You're looking down, part of the scenery that's so spectacular is climbing and looking down at the beautiful green snake of the Merced River. Also listening to the river as you're climbing, especially in the spring, like in the cooker area. Just hearing that roar just makes us feel like we're in Yosemite. I suggest you consider climbing as part of the outstanding and remarkable values plan."
(Individual, San Rafael, CA, Comment #37-1)

"[C]limbing itself does not directly affect the river environment (i.e. plants, animals and natural systems) unless climbers physically come in contact with the river, as, for example, to take a swim after a climb. Any direct climber contact with the river would be an infrequent exception, with most climbing near the river having no direct impact. Nevertheless, the Merced Wild and Scenic River Management Plan will have significant repercussions on the ability to climb or access climbs within the half-mile-wide river corridor. Given the significant amount of climbing areas that fall within the river corridor and the fact that climbing does not conflict with the natural processes of the river corridor, we feel climbing should be listed in the Outstanding Remarkable Values as an appropriate recreational use."
(Business, San Rafael, CA, Comment #112-5)

Response: The National Park Service recognizes that climbing in Yosemite is a world-class recreational activity. However, to be considered part of the recreational Outstandingly Remarkable Value, an activity must be river-related or river dependant and unique or exemplary in a regional or national context. While no one could argue that climbing in the Merced River corridor is not unique or exemplary, it is not a river-related activity. Please refer to the 2000 Merced River Plan for more discussion on how the Outstandingly Remarkable Values for the Merced River corridor were established.

Concern 115: The National Park Service should place additional buildings in Wawona on the National Register.

"I am pleased to note that the Pioneer Yosemite History Center at Wawona (once referred to colloquially as Doug's Berry Farm) is rated as having Outstandingly Remarkable Value. Restoring the Wawona Covered Bridge was the beginning, followed by moving in the historic buildings, most of which would have been destroyed by now had they not been gathered there. Recommendation: Though less eye-catching, I urge that the Powerhouse-Jail-Morgue be placed on the National Register and also the Mather Ranger Station and the Anderson Cabin. Almost all of the PYHC buildings are one-of-a-kind."
(Individual, Comment #10-1)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, this public concern is not within the scope of this document.

Concern 116: The National Park Service should include the El Portal Transportation Center as an Outstandingly Remarkable Value.

"The El Portal Yosemite Transportation Center exhibit was popular with visitors though crowded for space. Most of these vehicles are one-of-a-kind and I would consider them to be in the Outstandingly Remarkable Value category. I hope they are being cared for."
(Individual, Comment #10-2)

Response: The Transportation Center in El Portal includes the Bagby Stationhouse, watertanks, Hetch Hetchy Railroad engine #5, Yosemite Valley Railroad caboose number 15 and the remains of the Yosemite Valley Railroad turntable; all of these are listed in or eligible for listing in the National Register, for which they are included as part of the Cultural ORV within the river corridor boundary. In addition, these are all contributing elements to the Old El Portal Cultural Landscape, which is potentially eligible for listing in the National Register. As per the Wild and Scenic Rivers Act mandate to protect and enhance OUTSTANDINGLY REMARKABLE VALUES the Transportation Center, as part of the Cultural ORV, will be adequately protected.

Concern 244: The Revised Merced River Plan should specify known Outstandingly Remarkable Values but precede the list with the words, "including, but not limited to...", in order to capture species not yet identified in the corridor.

"When listing Outstandingly Remarkable Values, it is important to list all the known Outstandingly Remarkable Values, for example all the species, and precede the listing with the words, "including, but not limited to..." Otherwise the list could become hardened in time and fail to protect species not yet identified or located or that might move into (or be restored such as the red-legged frog) the River corridor."
(Individual, Comment #93-12)

"Outstandingly Remarkable Values GENERAL: Outstandingly Remarkable Values are dependent on broader systems for their protection and are more broad based than a listing species. When listing Outstandingly Remarkable Values, it is important to list all the known Outstandingly Remarkable Values, for example all the species, and precede the listing with the words, "including, but not limited to..." Otherwise the list could become hardened in time and fail to protect species not yet identified or located or that might move into (or be restored such as the red-legged frog) the River corridor. This is critically important. The Outstandingly Remarkable Values are the FOUNDATION AND BASIS of a protective and valid river plan. In addition, it is important to disclose that Outstandingly Remarkable Values, such as biologic and hydrologic, are not discrete. They are dependent upon the larger surrounding ecosystem and/or species for their health and existence; and therefore need to be protected and managed as such by protection of the environment which sustains them. The ORV definition should be so complete and comprehensive manner it becomes the baseline for monitoring."
(Conservation Organization, Yosemite, CA, Comment #111-95)

"Nature is not static and other species not currently within the Administrative Site might move in (such as mammals sighted in recent years such as mink and river otter), they are Outstandingly Remarkable Values and should be protected. (See Appendix E, E-1 through E-18)" (Conservation Organization, Yosemite, CA, Comment #111-112)

Response: The identification of Outstandingly Remarkable Values within the river corridor reflects the application of a standard that they meet the criteria of being both river-related and regionally or nationally unique or exemplary. The Outstandingly Remarkable Values for the river corridor within the park have been identified as part of the 2000 Merced River Plan. The categories of Outstandingly Remarkable Values were designed to account for the natural variability and flux that occurs in natural systems. As pointed out by the commentor, some special-status species not specifically called out could move into the area. Thus, all special-status species that are river related or dependent are part of the greater biological Outstandingly Remarkable Values. In El Portal, the park has adopted a river boundary that extends for a quarter mile either side of the river, and additional efforts have been undertaken as part of this planning effort to identify cultural, recreational, and biological Outstandingly Remarkable Values within this river segment. In addition, data collection on the protection and enhancement of ORV's will continue as part of the VERP program, an ongoing monitoring and adaptive management process.

Concern 425: The National Park Service should prepare a Revised Merced River Plan with protection of the Outstandingly Remarkable Values as the foundational element.

"Recognizing the importance of Outstandingly Remarkable Values, the WSRA Interagency Commission (2002) issued a management directive: "Thoroughly define the Outstandingly Remarkable Values to guide future management actions and to serve as the baseline for monitoring." Though the invalid Merced River Plan made a feeble attempt, it fell far short in justifying selection, denoting goals for protection, and specifying how management prescriptions would achieve stated objectives. This Revised River Plan has continued to sidestep these fundamental deficiencies." (Individual, Oakhurst, CA, Comment #55-10)

"I also must urge NPS to withdraw this inadequate document and prepare a new document with protection of the Outstandingly Remarkable Values as its fundamental and basic foundation." (Individual, El Portal, CA, Comment #109-2)

Response: The foundation of the Merced River Plan is to provide for the protection and enhancement of the Merced River's Outstandingly Remarkable Values. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues.

The Merced River Plan guides future planning and land use. Its management elements work synergistically to create a network of systems that will ensure the long-term protection and enhancement of Outstandingly Remarkable Values. Efforts continue on a day-to-day basis to restore natural river process and improve the overall health of the Merced River ecosystem. Ongoing monitoring along with continued restoration are not just foundational elements of this plan, but are part of the very mission of the National Park Service. The public will be regularly apprised of progress in the river corridor through quarterly VERP updates and an annual monitoring report.

Concern 441: The National Park Service should clearly identify the locations of Outstandingly Remarkable Values and how the park will deal with conflicts between Outstandingly Remarkable Values.

"What happens when Outstandingly Remarkable Values are in conflict and how does the Park objectively determine if one is more important than another? Is conflict between Outstandingly Remarkable Values necessary or is that merely evidence that the Outstandingly Remarkable Values were not thoroughly defined in the first place."
(Individual, Oakhurst, CA, Comment #55-8)

"The revised CMP provides little, if any, clarity regarding "outstanding remarkable values." It is difficult to determine where they exist and how they are to be protected."
(County Agency, Groveland, CA, Comment #140-1)

Response: Please refer to the original 2000 Merced River Plan/FEIS for discussions of how Outstandingly Remarkable Values were developed and how the park would manage circumstances if instances occurred where Outstandingly Remarkable Values were in conflict with each other. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. .

Concern 176: The National Park Service should consider the impacts of parking spaces on Outstandingly Remarkable Values.

"Based on personal observation, many NPS-sanctioned day use parking places have significant adverse impacts on Outstandingly Remarkable Values - affecting both natural resources and visitor experience. An example is the area where cars are parked on busy weekends on top of the bike path between the Sentinel Bridge shuttle bus stop and the 3-way stop sign at Sentinel Drive and Northside Drive intersection."
(Individual, Fresno, CA, Comment #82-13)

Response: The National Park Service recognizes that traffic congestion has implications to the overall visitor experience, can contribute to the degradation of some of the river's Outstandingly Remarkable Values, and can also affect vehicle and pedestrian safety. As a result, the park has developed an indicator of "Occupied Parking versus Capacity" which has a direct relation to the number of vehicles on roads and in parking facilities. If monitoring the number of vehicles in any activity area at any one time indicates that existing parking capacity is being exceeded, park managers will implement appropriate management actions (see list of potential management actions in Chapter II) to ensure that parking capacity is not exceeded, such that congestion on roads is minimized and related Outstandingly Remarkable Values in affected areas are protected.

Boundaries

Concern 165: The National Park Service should choose a 1/4 mile river boundary in El Portal that is consistent with the other segments of the river boundary.

"Choose a ¼-mile river buffer in El Portal. Public agencies often lay out a quarter-mile buffer on either side of a Wild and Scenic river. In order to uphold its reputation as an effective land protection agency, NPS should do the same in El Portal. If the buffer is sliced thinner in some places, NPS will have no ethical footing from which to lobby other Merced River managers and private landowners to protect the river. It will lose an opportunity to be an exemplary land management agency."
(Individual, Comment #81-13)

"I expect you to plan for the greatest preservation of Yosemite Valley's scenic, cultural and ecological attributes, basing management on a completed, valid, and legal Yosemite Merced River Plan. Your current proposed plan appears to avoid specifics regarding these special values. Specifically, the 1/4 mile buffer around designated Wild and Scenic Status should be adhered to."
(Individual, Davis, CA, Comment #115-1)

"In looking at the alternatives presented in the Draft MRP for the El Portal segment, I see none of the alternatives in and of themselves as a protective alternative for the Merced River as it travels through El Portal. The river corridor should certainly remain 1/4 mile wide as it is on all other parts of the Wild and Scenic river from what I understand - through YNP and on the West side of El Portal through the National Forest. The only alternative that presents this corridor is alternative 3, so in this aspect, I support that plan. The zoning of this alternative, however, seems to have no correlation to the Outstandingly Remarkable Values and not to be very protective of the river corridor."
(Individual, El Portal, CA, Comment #120-7)

Response: In response to public comments, the river boundary in El Portal has been modified in the Final Revised Merced River Plan/SEIS. As shown in Figure III-2, the river boundary in El Portal in Alternative 2 has been expanded to a quarter-mile on either side of the river, consistent with the remaining river corridor boundary in the park. Management zoning also has changed to be more protective of known natural and cultural resources on the north side of the river, and more protective of open space considerations on the south side of the river.

Concern 207: The National Park Service should select an El Portal boundary of 1/4 mile with more protective zoning.

"The Tribe would like the Park Service to consider the possibility of modifying the boundary and Zoning of the preferred alternative if Cultural resources and archeological sites are more susceptible to disturbance. Because of the past construction of housing and infrastructure, archeological sites and cultural resources were impacted by these projects. El Portal is considered to have the most and oldest archeological sites in the River gorges."
(Tribal Organization, Mariposa, CA, Comment #84-5)

"EPA has no objections to the preferred alternative (#2) user capacity program or proposed El Portal Boundary, since it represents greater protection for the Outstandingly Remarkable Values (Outstandingly Remarkable Values) of the river. Therefore we have rated the DSEIS as Lack of Objections (LO) (see enclosed "Summary of Rating Definitions). Because of the exceptional archeological resources in El Portal, however, and the cumulative impacts to traditional cultural resources from past practices, EPA requests that the National Park Service (NATIONAL PARK SERVICE) consider modifying the boundary and management zoning) to provide more protection to these resources of concern to tribal populations, if an analysis of the locations of significant archeological and traditional use resources reveals they lie in areas that would allow more disturbance (zoned 3C or not within the Wild and Scenic River boundary)."
(Conservation Organization, San Francisco, CA, Comment #125-1)

"Lock in maximum protection of Outstandingly Remarkable Values and open space in the El Portal river segment corridor. Protecting the Wild and Scenic Merced River and her Outstandingly Remarkable Values should be the absolute foundation of this plan. Some of the alternatives, however, are downright frightening in that their zoning allows for the possibility of massive development and resource impact within the quarter mile protection corridor. I have heard several times that "those purple areas on the map don't mean that development will occur, just that it will be possible in that zone." We need a better guarantee than trusting the good intentions of future park administrations and planning teams! Restrict future development with the most protective zoning possible. Protect the Outstandingly Remarkable Values by establishing the widest possible river protection corridor."
(Individual, El Portal, CA, Comment #132-4)

Response: As a result of public comment on the Draft Revised Merced River Plan/SEIS Revised Merced River Plan/SEIS, the river boundary and management zoning for the El Portal segment has been revised. As presented in this Final Revised Merced River Plan/SEIS Revised Merced River Plan/SEIS, Alternative 2 expands the corridor boundary to a quarter-mile on each side of the river. The boundary encompasses a total of 853 acres, which is equal to the maximum allowable acreage of 320 acres per linear mile of river under the Wild and Scenic Rivers Act and would be the same as all other river segments within Yosemite National Park. The zoning prescriptions under this alternative have been revised to provide more restrictive zoning in the areas of several identified Outstandingly Remarkable Values.

Concern 316: The El Portal boundary should support the full range of the objectives of the Wild and Scenic Rivers Act, not just being protective of Outstandingly Remarkable Values.

"While we agree with the court that the revised river plan must meet that standard, that standard does not fully reflect all of the purposes for which a river corridor is established. A wild and scenic river corridor is the zone of principal management emphasis for a wild and scenic river manager, as well as the area that provides the most tools and resources for the river manager. Corridor boundary establishment objectives should support the full range of the objectives of the Wild and Scenic Rivers Act and of wild and scenic river managers, not just being protective of outstandingly remarkable values. For example, corridor boundary establishment objectives should support the objectives of the river management plan, which according to statute should "address resource protection, development of lands and facilities, user capacities, and other management practices necessary or desirable to achieve the purposes of this chapter."
(Conservation Organization, Sacramento, CA, Comment #116-2)

"It should make clear (and show in practice) that corridor boundary criteria involve a full range of wild and scenic river management considerations. It should also successfully address issues expected in wild and scenic river management plans."
(Conservation Organization, Sacramento, CA, Comment #116-7)

Response: The Wild and Scenic Rivers Act of 1968, as amended (Public Law 90-542, 16 USC 12371-1298), identifies distinguished rivers of the nation that possess remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values; preserves the rivers' free-flowing condition; and protects their local environment. The act requires managing agencies to prepare a comprehensive management plan to protect each river and its outstanding and unique values. In 1987, the U.S. Congress designated the Merced a Wild and Scenic River. The National Park Service adopted the Merced River Plan in 2000 to comply with the requirements of this act. This Revised Merced River Plan/SEIS revises the Merced River Plan to ensure that the plan fully complies with the direction of the act in preserving the free flow and protecting and enhancing the outstanding values of the river.

In 1958, Congress authorized the National Park Service to establish an administrative site in El Portal to allow for the relocation of park operations and administration facilities outside Yosemite National Park (72 Stat. 1772). This act specified that the El Portal Administrative Site was not subject to the laws and regulations governing Yosemite National Park. The purpose for creating the El Portal Administrative Site was to "enable the Secretary of the Interior to preserve the extraordinary natural qualities of Yosemite National Park, notwithstanding its increasing use by the public," by allowing the National Park Service to move operations and administrative facilities outside the boundaries of the park.

However, as a result of public comment to the Draft Revised Merced River Plan/SEIS Revised Merced River Plan/SEIS, the river boundary and management zoning for the El Portal segment has been revised. As presented in this Final Revised Merced River Plan/SEIS, the boundary has been changed to a quarter mile on either side of the river, which provides consistency with the remainder of the Merced River corridor within National Park Service administered lands and adjacent land management agencies with jurisdiction of the Merced Wild and Scenic River.

Concern 317: The National Park Service should include the private land parcels in the El Portal boundary, and should provide a discussion of the general principles of potential land acquisitions.

"The preferred revised river plan corridor also excludes the private land in El Portal from the river corridor. This highlights and compounds a weakness in the original river plan that should have been addressed in this planning effort."
(Conservation Organization, Sacramento, CA, Comment #116-3)

"Although the CMP acknowledges that "[t]he National Park Service must develop management direction in regards to these private properties," it is unclear where (or 6 if) the CMP establishes or describes a clear vision for private land corridor management; nor does it contains any narrative, criteria, or process specifically identified to guide the Federal river managers, local governments, or private parties in their hopefully common efforts to implement such a vision and goals. This deficiency should be addressed in the final CMP.7"
(Conservation Organization, Sacramento, CA, Comment #116-4)

"The final 2000 river management plan did not respond to our comments. No sense of the NPS corridor manager's vision for private land general plan and zoning approaches that would be consistent with the management vision of the river corridor can be gleaned from the pages of either NPS Merced River management plan. In subsequent discussions with NPS staff, we were told there was no Land Protection Plan for Yosemite that touches this issue (see footnote). Worse yet, the boundaries established or proposed in these plans excludes private land from the river touches this issue (see footnote). Worse yet, the boundaries established or proposed in these plans excludes private land from the river touches this issue (see footnote). Worse yet, the boundaries established or proposed in these plans excludes private land from the river corridor, limiting the tools provided by the Act to help assist private landowners in meeting corridor management goals."
(Conservation Organization, Sacramento, CA, Comment #116-5)

Response: The National Park Service does not have jurisdiction over private lands within the Merced River corridor which reside within the El Portal Administrative Site. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. A discussion of general principles dealing with potential land acquisitions in a Wild and Scenic River corridor are addressed under Sections 6, 8, and 14 of the Wild and Scenic Rivers Act. These are also discussed further in Chapter I of the 2000 Merced River Plan/FEIS.

Concern 408: The National Park Service should consider potential benefits and impacts, and cumulative past impacts when delineating and zoning the El Portal boundary.

"Because of the exceptional archeological resources in El Portal, however, and the cumulative impacts to traditional cultural resources from past practices. EPA requests that the National Park Service (NPS) consider modifying the boundary and management zoning) to provide more protection to these resources of concern to tribal populations, if an analysis of the locations of significant archeological and traditional use resources reveals they. lie in areas that would allow more disturbance (zoned 3C or not within the Wild and Scenic River boundary)."
(Conservation Organization, San Francisco, CA, Comment #125-2)

"To the extent known, provide additional information in the FSEIS regarding archeological and traditional cultural resources within the El Portal boundary"
(Conservation Organization, San Francisco, CA, Comment #125-5)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. For a discussion of the environmental consequences with each El Portal boundary alternative, refer to Chapter V: Environmental Consequences of the Final revised Merced River Plan/SEIS.

Management Zones

Concern 208: The National Park Service should more broadly define the boundary and should limit development-oriented zoning (such as 3C and 2C), in the El Portal boundary due to sensitive resources, particularly at Hillside East and West.

"The Tribe would like the Park Service to consider the possibility of modifying the boundary and Zoning of the preferred alternative if Cultural resources and archeological sites are more susceptible to disturbance. Because of the past construction of housing and infrastructure, archeological sites and cultural resources were impacted by these projects. El Portal is considered to have the most and oldest archeological sites in the River gorges."
(Tribal Organization, Mariposa, CA, Comment #84-5)

"Hillside East and West should not be developed. Keep those scenic areas and resources zoned as open space."
(Individual, El Portal, CA, Comment #132-7)

Response: Many public comments expressed concern about the zoning and size of the El Portal Boundary in the preferred alternative. In response to these concerns, the National Park Service increased the size of the boundary to a quarter-mile on both sides of the river to better match the boundary in the rest of the park. Additionally, more restrictive zoning was added to much of the south side of the river and sensitive resource areas north of the river—in particular at Hillside East and West.

Concern 216: The National Park Service should reevaluate management zoning in terms of user capacity to primarily focus on protection of natural resources and Outstandingly Remarkable Values.

"ADHERENCE TO FLAWED ZONING. This Revised River Plan endorses the same complex list of zones and permitted activities that were included in the invalid Merced River Plan. And though Park releases insist that the invalid Plan's management zoning program would not be revisited in the new planning effort--we continue to believe such a position is a grievous error. With respect to user capacity, WSRA Guidelines specifically state that "studies will be made during preparation of the management plan and periodically thereafter to determine the quantity and mixture of recreation and other public use which can be permitted without adverse impact on the resource values of the river area. Management of the river area can then be planned accordingly." The amount of use an area can sustain is inextricably linked to how the resource is to be managed. Adhering to hollow zoning delineations that were developed without resource and monitoring information coupled with a lack of user capacity research renders any 'revised' Plan fatally flawed. Current land-use management zoning appears to have been designed to accommodate predetermined development projects rather than protection of natural resources and OUTSTANDINGLY REMARKABLE VALUES as the primary focus. (David Siegenthaler of the National Park Service stated as much in El Portal, 2/1 1/00, in a formal Public Hearing presentation that the River Plan is "leaving the door open to accommodate a host of projects that have been on the table for a long time.")"
(Individual, Oakhurst, CA, Comment #55-14)

"NPS has failed to reevaluate management zoning in terms of use capacity. The amount of use appropriate for any location is directly related to the type of use authorized. Allowing for uses with less impact, ie fewer hardened surfaces, fewer paved areas, fewer restaurants and commercial services, can allow for sometimes a greater number of visitors while still protecting Outstandingly Remarkable Values. So NPS's refusal to provide for any alternatives that reevaluate the Management Zones in light of the court's mandate for NPS to address user capacity is illegal. When NPS set the Management Zones in the first CMP, it did so without any consideration of capacities in each zone or how management zoning would protect Outstandingly Remarkable Values. The type of use is a critical component of capacity."
(Conservation Organization, Yosemite, CA, Comment #111-66)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues.

Except as noted in the requirements established by the Ninth Circuit Court of Appeals, the existing management elements, which includes management zoning, as analyzed in the June 2000 *Merced Wild and Scenic River Comprehensive Management Plan/Final Environmental Impact Statement* and adopted in the Record of Decision (as revised) in November 2000, remain unchanged and are not addressed as part of this planning effort. A further discussion with regard to this is presented in Chapter I of this document.

Concern 251: The Revised Merced River Plan should eliminate the use of destructive Yosemite Valley Plan zoning.

"Please…[throw] out the Management Zones which are virtually a planning map for the Yosemite Valley Plan. Then start again on a fresh draft with the Outstandingly Remarkable Values and build a River Plan based on their protection."
(Individual, Comment #93-19)

"The FoYV representative urged the planners and consultants that in order to develop a protective plan for the Merced's Outstandingly Remarkable Values, it would need to be based on and built around, those values. The FoYV representative suggested time and again a method to accomplish this: throw out the unprotective 2000 MRP Management Zoning which, rather than being based on Outstandingly Remarkable Values, is based on accommodating pre-decisional Yosemite Valley Plan (YVP) projects; then list, clearly define, and thoroughly document the Outstandingly Remarkable Values and build the plan from there. We asked the planning team to focus on the Outstandingly Remarkable Values as the foundational BUILDING BLOCKS of the plan."
(Conservation Organization, Yosemite, CA, Comment #111-2)

"IMPORTANCE OF YOSEMITE NATIONAL PARK and PROTECTING MERCED RIVER Outstandingly Remarkable Values: While the D. R. MRP states Yosemite and the Merced River's importance in one section (quoted below), the plan itself with its YVP Management Zones, and so on, continues the non-protective framework in the invalid 2000 MRP; and allows for, and in fact sets the framework for, degradation and destruction of these same values."
(Conservation Organization, Yosemite, CA, Comment #111-15)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Except as noted in the above requirements established by the Ninth Circuit Court of Appeals, the remaining management elements analyzed in the 2000 *Merced Wild and Scenic River Comprehensive Management Plan/Final Environmental Impact Statement* (Merced River Plan/FEIS) and adopted in the Record of Decision (as revised) in November 2000, remain unchanged.

Concern 253: The Revised Merced River Plan should reevaluate the destructive zoning in El Portal that is not protective of the Outstandingly Remarkable Values.

"There is a complete discontinuity between the stated importance of El Portal values, its Outstandingly Remarkable Values, and the degradation and destruction of those same values inherent in the Management Zoning of the plan. Saying something is nice, does not overcome a set up for destructive action."
(Conservation Organization, Yosemite, CA, Comment #111-16)

Response: Zoning is a management tool and a safeguard for guiding future land use decisions in the Merced River corridor. If an individual action is proposed within the appropriate zone, it must still be evaluated for impacts to Outstandingly Remarkable Values. If the action were found to adversely impact Outstandingly Remarkable Values it could not be implemented without appropriate mitigation measures to ensure Outstandingly Remarkable Values are protected.

However, as a result of public comment to the Draft Revised Merced River Plan/SEIS, the river boundary and management zoning for the El Portal segment has been revised. As presented in this Final Revised Merced River Plan/SEIS, the boundary has been changed to a quarter mile on either side of the river, which provides consistency with the remainder of the Merced River corridor within National Park Service administered lands and adjacent land management agencies with jurisdiction of the Merced Wild and Scenic River. In addition, changes in management zoning on the north side of the river now affords greater protection through increased Day Use (2C) management zoning in areas of known sensitive resources, and changes in management zoning on the south side of the river now affords greater protection of scenic qualities, wildlife habitat and cultural resources through Open Space (2A) management zoning east of the Highway 140 bridge.

Concern 356: The National Park Service should revise potential management actions in wilderness zones of Yosemite Valley so that the levels of climber access won't be reduced.

"While the half-mile-wide corridor defines the scope of the plan, this broad swath of land encompasses areas and appropriate, compatible uses that have, at most, an incidental relationship with the river. As is described above, rock climbing is a good example of this zoning problem. Climbing bears the full brunt of management action while having little to no direct impact on the river environment itself.

Of particular concern in this regard are the numerous areas in which the 1A wilderness zone appears within the Valley segment of the Merced River corridor. These untrailed wilderness zones appear to include access corridors to many of the most historic and popular climbing areas in the Park, as well as many important rock climbs themselves. Access in these zones occurs on undesignated trails, the climbing routes themselves are not formally designated and the recreational experience is among the most primitive and unconfined possible. Nevertheless, existing primitive recreational use of these routes and access trails would significantly exceed the human encounter-based capacities established for these untrailed wilderness zones (no more than one encounter with another party per day 80% of the time). Given the possible management actions spelled out in Table II-B, we are concerned that efforts to regulate, permit and limit climbing opportunities in these untrailed wilderness areas within the river corridor would result in recreational use levels well below current and historic use levels."
(Business, San Rafael, CA, Comment #112-6)

"[T]he current draft plan does not appear to have adequately considered how climbing (and other primitive recreational uses of these untrailed zones) will be affected by the interim limits and long-term use of VERP in these intersections between the river corridor and designated wilderness. We are quite willing to consider restrictions on climbing (and have done so in many other parks and forests) when there are demonstrable climbing-related impacts to the environment. However, it is impossible to support the dramatic reductions that may result in these areas that are mere yards from bike paths, bus stops, grocery stores and other urban amenities, yet that would be managed to a standard more appropriate for a remote wilderness peak."
(Business, San Rafael, CA, Comment #112-8)

Response: Management zone limits proposed in Alternative 4 of the Final Revised Merced River Plan/SEIS were calculated based upon a People At One Time (PAOT) density factor and include the total number of people within the management zone type. In the event that visitor levels in Alternative 4 exceed management zone capacities, management actions may be necessary. Specific management actions implemented as a result of VERP monitoring would be guided by the impacts caused to river values and the visitor experience associated with particular types and levels of use. Depending on the type of management action chosen, further National Environmental Policy Act review and public involvement would be required.

Concern 403: The National Park Service should choose the management zoning scheme as identified in Alternative 4 because it follows the Outstandingly Remarkable Values and is more protective overall.

"In terms of zoning, alternative 4 is my preference because it follows the Outstandingly Remarkable Values and has much more protective zoning overall."
(Individual, El Portal, CA, Comment #120-8)

Response: While the National Park Service did not select Alternative 4 as its preferred alternative, the planning team has considered concerns for more protective zoning within the El Portal segment of the river. As a result of public comment, more protective zoning has been proposed for the El Portal boundary preferred alternative (Alternative 2) within the El Portal segment of the Merced River.

Wawona/Section 35

Concern 293: The National Park Service should consider the adverse impacts associated with using Wawona as an alternative administrative area if development in El Portal is restricted.

"Since the 1998 Act establishing El Portal as an Administrative Site, YNP has been increasing its presence there. If present structures are deemed inappropriate, or if new construction is banned by more restrictive alternatives, the Park Service will have to look elsewhere. Wawona has been declared an alternative administrative site, if better sites are not available. The historic, low-density, residential nature of Wawona would be seriously affected. Many other problems, including housing, winter access, and resident protest, limit the usefulness of this site."
(City Agency, Mariposa, CA, Comment #138-6)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. Any potential future plans to use Wawona as an administrative area would have to comply with the National Environmental Policy Act and would undergo the appropriate environmental review, with public comment.

Visitor Experience

Concern 280: The National Park Service should consider the degradation of the visitor experience associated with park projects.

"I really would like you to understand and feel how my former experience of traveling the El portal road, enjoying the CCC historic rock wall, the Black Oak overstory, the complex mosaic habitat along the upslopes and the downslope fuse of the Merced river was a well loved, joyful, intrinsic part of my visitor experience. No more. I have wept for this. All these former ORV's have either been degraded or destroyed."
(Individual, Cupertino, CA, Comment #103-7)

"Members of FoYV and MERG have had their former experience of traveling the El Portal Road/Merced River Gorge, enjoying various of the former Outstandingly Remarkable Values, the CCC historic rock wall, the black oak overstory, the complex mosaic habitat along the upslopes, and the downslope views of the Merced River either degraded or destroyed."
(Conservation Organization, Yosemite, CA, Comment #111-97)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities in the river corridor. All park projects must be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public comment. Part of this environmental review would include assessing the potential impacts on visitor experience.

Concern 432: The National Park Service should take into consideration the adverse impact to the visitor experience in the Gorge due to the unpleasant sewer smells since the El Portal Road Project occurred.

"Since the new road/sewer was blasted illegally into place along the El Portal Road throughout the Merced River corridor between El Portal and Yosemite Valley the sewer smell has become an esthetic problem—adding to the immediately obvious visual esthetics lost in this rushed project. This can not be justified in terms of River WSRA Outstandingly Remarkable Values and even VERP. The visitor experience is marred by all these unpleasant smells. This is even apparent to people driving in their cars as well as those people who choose to leave their cars for a swimming, climbing, hiking or fishing experience in the Gorge and in El Portal."
(Individual, El Portal, CA, Comment #109-14)

Response: The National Park Service's main trunk line for pumping sewage from Yosemite Valley to the El Portal Wastewater Treatment Plant runs directly below the El Portal Road. In order to prevent "air-locks" in the sewer system from restricting movement of sewage as it passes through the Gorge under the El Portal Road, a series of vents have been placed above the road corridor to release pressurized air. In isolated instances this may cause detectable odors for short periods of time along this road segment.

Visitor Use Management

Concern 357: The National Park Service should modify methodology used to determine visitor user capacity in wilderness zones for the Valley because looking at solitude or PAOT adversely impacts climbing activities.

"Our concerns about the impact of capacity limits for wilderness areas within the Merced Wild and Scenic River corridor are based not just on the fact that there may be significant cuts when compared to current and historic use levels, but also because of significant concerns about the methodology used to justify the limits. We have significant concerns about using human encounters as the sole surrogate for "solitude" in managing all wilderness use within Yosemite National Park. Further, we believe there are significant flaws in using this methodology to regulate climbers in both open cliff environments like those found in the Valley segment of Yosemite, as well as in alpine terrain like that found in the remote wilderness segments and in other climbing destinations like Mount Rainier and Denali National Parks. Encounter standards may have some usefulness for managing park visitors in some situations, but it is an especially poor standard for managing mountaineering and rock climbing due to the unique expectations of climbers and the distinct physical limitations imposed by the natural environment."
(Business, San Rafael, CA, Comment #112-9)

"The Wilderness Act's definition of wilderness contains several factors, among them that a wilderness "has outstanding opportunities for solitude or a primitive and unconfined type of recreation." Many land managers have focused exclusively on the solitude portion of this definition, and attempt to control use numbers to guarantee that solitude exists within all corners of the wilderness at all times. There are two significant flaws to this approach. First, though it is clear that Congress intended for wilderness lands to possess more solitude generally than non-wilderness lands, it is not clear that Congress placed solitude above primitive and unconfined recreation in all instances. Second, solitude can be defined in many ways, with "human encounters" but one of many possible surrogate measures—and not always the most important or appropriate. To a climber, the unique primitive and unconfined recreational experience of climbing in Yosemite may be far more important than the lack of humans encountered during a visit or while on a particular climb. We believe there is nothing in the Wilderness Act that prohibits the NPS from managing some portions of the wilderness more for primitive recreation and other areas more for solitude—all the while protecting the relative solitude these lands possess when compared to non-wilderness lands… the AAC believes the human encounter standard is a poor judge of wilderness solitude when applied to regulating climbing."
(Business, San Rafael, CA, Comment #112-10)

Response: The National Park Service recognizes this concern as it relates to the User Capacity Management Program for Alternative 4. Management zone limits proposed in Alternative 4 of the Final Revised Merced River Plan/SEIS were calculated based upon a People At One Time (PAOT) density factor and include the total number of people within the management zone type. In the event that visitor levels in Alternative 4 exceed management zone capacities, management actions may be necessary. Specific management actions implemented as a result of VERP monitoring would be guided by the impacts caused to river values and the visitor experience associated with particular types and levels of use. Depending on the type of management action chosen, further National Environmental Policy Act review and public involvement would be required.

Visitor Activities

Concern 119: The National Park Service should consider increased crowding and garbage along the Mist Trail and the negative impact to the visitor experience.

"As my use of the park relates to the MRP, I use the Mist Trail along the river on the way to Half Dome at least twice a year. This section of trail along the river is, as we all know, significantly more crowded than it was just two or three years ago -- indeed, the area between Yosemite Valley and Half Dome gets the most day use of any wilderness or backcountry zone within the Merced River corridor. From a visitor experience point of view, this increase in visitation means increasingly congested conditions and more and more garbage (especially water bottles) left along the trail. I don't hike the trail to Half Dome during peak visitor season because there are just too many people making too much noise (the number of people using cell phones along the trail (specifically above Vernal Falls, above Nevada Fall and on the summit of Half Dome) have increased significantly (or so it seems clear to me) in the last two or three years."
(Individual, Carmichael, CA, Comment #25-1)

Response: The VERP program will monitor numerous indicators that look at visitor use levels within the Merced River corridor. Some of these include as "Number of Encounters with Other Parties" and "Number of People at Selected Sites." Another indicator—"Wildlife Exposure to Human Food"—will monitor availability of human food and sources of food such as, garbage.

Concern 192: The National Park Service should include visitors who do not come to Yosemite Valley in surveys conducted to develop standards for visitor experience.

"Any surveys conducted to develop standards for quality of visitor experience must include people who do not come to Yosemite Valley. This must be done in order to factor in those people who are already displaced (AT ANY SEASON) because of actual or perceived crowding. Thus, if people don't come in summer but come at some other time, then summer is too crowded."
(Individual, Fresno, CA, Comment #82-36)

Response: Beginning in the summer of 2005, the National Park Service will conduct a Visitor Use Survey designed to gain information about visitor use patterns and overall visitor satisfaction in Yosemite National Park. This very comprehensive survey will only be conducted throughout the park. However it is acknowledged that there may be important information gained by surveying those who no longer come to the park.

Concern 81: The National Park Service should clarify why campfires are limited in Yosemite Valley.

"The whole advent of limiting camp fires. I don't understand it. It's very frustrating."
(Individual, Comment #45-4)

Response: Additional information regarding fires and campfires in the park can be found in the Yosemite Fire Management Plan. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, this public concern is not within the scope of this document.

Concern 82: The National Park Service should recognize that the Campground Reservation system is limiting the number of campers and increasing day users.
"The other is the reservation systems... It's not working. It's limiting campers and increasing day use people."

(Individual, Comment #45-5)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Future decisions that may relate to camping and the park's existing campground reservation system will be subject to the appropriate level of environmental review and public involvement. Yosemite's VERP component of the User Capacity Management Program will monitor specific indicators to determine if visitors to the park are adversely affecting resources in the river corridor, and take appropriate management actions to ensure that the Merced River's Outstandingly Remarkable Values are being protected and enhanced.

Concern 83: The National Park Service should restore campsites and allow more freedom in camping related recreation activities.

"If there were more campsites in the valley, which we believe there should be, we wouldn't have huge peaks in the visitation. Because if you have a campsite, you know where you're going, you know where to stay. It's very fixed and you don't need a big support structure. Things like ice and maybe some firewood are nice amenities, but we seem to have to make the trip anyways to the two or three outlets that we have."
(Individual, Santa Monica, CA, Comment #39-4)

"It was the -- it's the momentum, what we call harassment of our camping experience, from getting rid of fire falls because somebody decided it was bad for the environment -- we're north pine campers -- to taking out river sites after they paved them all and put down concrete bumpers. They decided to take out half of them. Closing the group camping. I don't know why."
(Individual, Comment #45-2)

"I see, also, that Alternative 2 seems to have the potential of more campsites, and I think this is good. I hope you will always opt for more space for those who want to experience Yosemite's sights and sounds from a tent over those who need a lodge room or cabin."
(Individual, Comment #80-2)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. The issues regarding more freedom in camping and related recreation activities raised by this concern will be addressed as appropriate, in future implementation plans.

Concern 120: The National Park Service should have continued with the Firefall.

"Now the Merced River Plan is in your hands -- you tell us; we are turning to you for the next phase of development." I bet! I don't mean to sound cynical, but I guess I am. If you listened to me... You would have kept the firefall -- dubbed as TOO commercial while putting in a full bar at the Lodge, not that I don't like the bar -- it just seems a contradiction."
(Individual, Comment #3-15)

"One of my favorite things was to sleep out under the stars and a full moon. Of course my wife-to-be and I both loved to watch the Fire Fall and wish it could be staged again. I know it's not an act of nature, but for two lovebirds it had deep meaning."
(Individual, Castro Valley, CA, Comment #18-1)

Response: It is widely held that the Firefall was a lasting and endearing Yosemite tradition. While the Firefall of alpenglow can still been on the Valley's walls, the Glacier Point tradition will best live on in memories and photographs. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, this public concern is not within the scope of this document.

Carrying Capacity

Concern 80: The National Park Service should recognize that Yosemite is literally being "loved to death."

"Thank you for the opportunity to participate in managing Yosemite. I have visited it for over 60 years and it is one of my favorite spots on earth. I am afraid that with the destruction of habitat where we live, more and more pressure is being put on public places like Yosemite and in my view Yosemite is literally being "loved to death.""
(Individual, Lake San Marcos, CA, Comment #53-1)

"As striking as it is, the Merced River is a very stressed environment. Non-native fish prey on native creatures. Riverside buildings disrupt water flow. Trampling erodes the Merced's banks and irrevocably alters adjacent meadows. Millions of us draw close to the Merced in our enthusiasm for its beauty. With our sheer numbers and widespread lack of knowledge about how to care for the river, we unknowingly destroy some of the beauty we seek."
(Individual, Comment #81-1)

Response: Yosemite is recognized worldwide for its unique and stunning beauty. This beauty is not made up not only of grand vistas and landmarks, but also of its unique components such as the Merced River and its banks, adjacent meadows, wildlife and a healthy ecosystem. The 1980 *General Management Plan* established goals to guide the management of the park to perpetuate its natural splendor for future generations to enjoy. The goals of the 2000 Merced River Plan (as amended by this plan) are consistent with both the *General Management Plan* goals and the requirements of the Wild and Scenic Rivers Act. Together these plans will guide decision-making processes for actions within and adjacent to the river corridor to ensure that proposed projects would protect and enhance river values.

Concern 228: The National Park Service should consider the effects of a busing system on visitor experience.

"you do have the gas-powered busses, but the visitor experience, they're all crowded together. You're all crowded in this big parking lot, and then you have got to take these little busses around the park. So the visitors really don't get what we would consider a nice visitor experience, some of us that have talked about this. It's -- the visitor experience is something where people can actually get out in the Valley and feel somewhat by themselves, and when you're piled into these busses or you are driven around the Valley -- and you have got plans for an 18-bay bus terminal."
(Individual, Citrus Heights, CA, Comment #95-6)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities in the river corridor. As such, the plan does not implement a busing system and so does not consider the effects thereof. All potential park projects must be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public comment. Part of this environmental review would include assessing the potential impacts on visitor experience.

Concern 309: The National Park Service should improve the visitor experience by encouraging mass transit, including the tour bus industry, and recognize that future visitors will likely prefer a bus option.

"We concur with the finding that the visitor experience would be improved through "educational measures related to traffic congestion . . . aimed at encouraging mass transit or other means of reducing traffic congestion, which, based on recent visitor surveys, is one of the most negative factors affecting visitor experience."
(Business, Castroville, CA, Comment #118-2)

"The CBA believes strongly that the tour bus industry can play a vital role in providing visitor access to Yosemite while reducing both the aforementioned automobile congestion and improving air quality."
(Business, Castroville, CA, Comment #118-3)

"we question one assumption that framed the analysis (listed in IV-15 Methodologies): namely, that "the visitor preference for use of private vehicles to access the park would not change." We believe that with an aging population, increased traffic congestion, and expensive fuel, there is a high probability that in the future a greater percentage of visitors will chose the safest, convenient, and most fuel efficient means of accessing Yosemite—the motorcoach."
(Business, Castroville, CA, Comment #118-4)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities in the river corridor. As such, the plan does not implement a busing system and so does not consider the effects thereof. If the implementation of a busing system is considered as a potential park project, it would have to be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review, including an assessment of impacts on visitor experience, with the public involvement process.

Concern 209: The Revised Merced River Plan should include a quantitative analysis of User Capacity issues.

"[I find the plan] not really addressing some key issues that I understand it was to address. It appears, among other things, to lack any quantitative substance with regard to addressing capacity issues." (Individual, Comment #93-2)

Response: By its nature, the Final Revised Merced River Plan/SEIS in a programmatic document. As such, it is appropriate that the level of analysis and the actions that are described in this document are presented in more qualitative, rather than quantitative terms. The Final Revised Merced River Plan/SEIS does not propose or implement specific construction or development-related projects. Rather, it describes and analyzes a comprehensive user capacity management program that can be implemented to ensure that the Outstandingly Remarkable Values within the Merced River corridor will be protected and enhanced, consistent with the requirements of the Wild and Scenic Rivers Act.

Access

Concern 121: The Revised Merced River Plan should clarify how Visitor Experience and Resource Protection will control visitation levels.

"Based upon the method that you intend to use to evaluate visitation over the upcoming years, via that VERP system that you love so much, you will see more than five million visitors per year. That is exactly your way of slowing allowing more and more people in, as you develop your crowd control stanchions and systems, i.e., the Lower Falls project, the shuttle systems, etc."
(Individual, Truckee, CA, Comment #26-1)

"Your other options, the ones that cap visitation at 5 million per year is, as you say not your preferred method. They way you represent your views in the study, indicates that you are trying to sell us on the idea that your preferred option, option two doesn't cap visitation, but keeps the control of visitation levels under the control of the public via the VERP system. ... I believe that you didn't want to give us any options like that, because you knew many in the public would shun any option that showed a cap at all. Because of that, you knew that if presented in the right way, you could use that desired effect to make all options other than your preferred option look scary. By using that logic, you put a cap of five million on option three and four as the point where no more people would be allowed into the park, and that way the public sees your "preferred" option as looking like the most reasonable. When in fact, your preferred option actually leaves the flood gate open for the potential of far more visitors, perhaps even as many as ten million visitors a year some day. You don't say that in any of your representations of course, which is where I say you are not showing all of your cards to the public. If they knew that, I think they'd probably want to cap it a five million, as crazy as that number seems. Five million is 25% higher than at any time in our history, but by comparison to six million or more, five million actually looks good! But, by the way you presented it, you made it look like the scary options, when in my mind, the VERP option is the scariest."
(Individual, Truckee, CA, Comment #26-2)

Response: "Take only photographs and leave only footprints" is an often-used saying in natural areas. VERP is a user capacity management process that takes a different approach to the notion of a "capacity" by considering the effects of the "footprints" left behind. Rather than focusing solely on numbers of people, the VERP process strives to maintain the conditions desired for a particular area (in the case of the Merced River, protection of the river's Outstandingly Remarkable Values). How many footprints are there? Where are they going? During what time of day, month, or season do we find those footprints? VERP looks at the condition of various resources (including the visitor experience) and sets a measurable standard for the type of condition that is most desired. If that standard is reached or exceeded, managers must take action to correct the situation and bring conditions back to within standard. This action can translate to limiting visitation in given areas where impacts occur. This is consistent with the best available science on user capacity management. VERP allows park managers to use a number of measures and techniques to address use related impacts, including limits on visitor or other use levels where appropriate. It also allows managers to use many other measures (education, site management, etc.) to address impacts without impacting use levels.

Concern 2: The National Park Service should plan for ways to manage visitor impacts along the river, other than restricting access to the river.

"Under the heading of "why an alternative would or would not work?" -- it won't work if you try to block off all access to the river which I am sure you don't intend to do. People are going to tramp their way down to the river when they are hiking etc. so you might as well plan for it."
(Individual, Comment #3-11)

Response: In order to properly protect and enhance the river's Outstandingly Remarkable Values, the park may implement a range of management actions when conditions are approaching or not meeting standards. The actual management action(s) selected would depend on the particular setting and situation encountered (see list of potential management actions in Chapter II of this document), and may in some instances include restricting access to the river. However, prior to implementing a specific management action, the park would undertake the appropriate level of environmental review and public involvement. In addition, the National Park Service would provide information on the specific management actions being proposed through ongoing public involvement processes, such as the VERP quarterly updates and annual report.

Concern 4: The Revised Merced River Plan should prescribe a Merced River parkway up or down river of Snelling to increase visitor access to the river.

"A Merced River parkway accessible to the public from Hwy 59 bridge, G St bridge, Snelling, or anywhere further up or down river to Yosemite would be a great heritage to leave future generations. We enjoy kayaking this stretch very much but access is difficult nowadays."
(Individual, Winton, CA, Comment #24-1)

Response: The National Park Service has jurisdiction over 81 of the total 122 miles of the Merced River corridor. This includes lands only within the borders of Yosemite National Park and the El Portal Administrative Site. The section of the Merced River parkway in Snelling is well beyond the jurisdiction of the National Park Service. It also extends beyond the Merced Wild and Scenic River's extent, which is from the headwaters in Yosemite National Park to Lake McClure in the Sierra foothills. Based on the above, this public concern is not within the scope of this document.

Concern 56: The Revised Merced River Plan should provide a detailed protocol for tracking visitor distribution and numbers.

"The final plan should provide a detailed protocol for tracking visitor distribution and numbers. Tracking visitor use is a key point in the Merced Wild and Scenic River Management Plan and a detailed plan for exactly how visitor use will be monitored is therefore necessary. The draft plan proposes a "future real time automated traffic data monitoring" system. What exactly does this mean? Will this include automated traffic direction as well? As one method for tracking traffic, CSERC proposes the consideration of RF chip technology. When handed out to incoming vehicles, RF chips can store information on point of entrance, persons per vehicle and destination, and be tracked using monitors placed at key locations such as intersections and parking lot entrances and exits. A more economical alternative involves automated car counters located at key locations (intersections and parking lot entrances and exits) and linked through a network. Such a system could give real-time information on the number of cars in any given area and be used to direct cars away from areas where quotas have been reached."
(Conservation Organization, Twain Harte, CA, Comment # 29-9)

Response: The National Park Service has a program in place that tracks vehicular movements through the eastern portion of Yosemite Valley. In addition, buses and overall visitation counts are tracked at each of the park entrance gates. The park will continue to review and evaluate new technologies related to tracking visitor distribution and numbers, with the goal of updating and enhancing the park's ability to track visitor distribution and numbers in the future.

Concern 139: The Revised Merced River Plan should use Groups At One Time (GAOT) as the numeric capacity metric across all of the user capacity alternatives.

"The most managerially practical and well understood numeric capacity metric is Persons At One Time (PAOT) or Groups At One Time (GAOT). I recommend that each geographic part of the Merced WSR area be subdivided into discrete practical management units with an overall numeric GAOT either as a specific number or numeric range...In addition, each of these units may have other secondary capacity metrics relevant to a specific area or facility such as trailhead quotas, parking spaces, bus capacities, kayaking and commercial rafting capacities, designated campsites, hotel rooms, and employee housing."
(Individual, Fort Collins, CO, Comment #73-12)

Response: The Revised Merced River Plan/SEIS has proposed a range of user capacity program alternatives for the Merced River corridor that evaluate different ways to mange visitor use. One of the three action alternatives, Alternative 4, evaluates managing visitor use by means of determining a social density metric of People At One Time (PAOT). In addition, the VERP program has been adopted across all user capacity program alternatives in order to provide park management with information about impacts to resources and the visitor experience from visitor use. Though the park is capable of implementing a user capacity program that regulates visitor use at the management zone level such as PAOT or GOAT, those methods may not necessarily be the most efficient way to mange visitor use in a large park such as Yosemite.

Limiting Access

Concern 5: The National Park Service should continue to allow private vehicles in the Valley and maintain an appropriate level of parking spaces.

"My number 1 concern is that you don't go the way of Grand Canyon, with bus only roads in the Valley. This drastically lowers the quality of the visiting experience at Grand Canyon. Most of the rim is now off limits if you can't walk several miles."
(Individual, Los Gatos, CA, Comment #2-1)

"Let's be honest—the ONLY goal that matters from the GMP is getting private vehicles out of the Valley and converting access to an urban-style mass transit system. That's why user capacity had to be redefined. There was no way the old definition about adverse impacts to Outstandingly Remarkable Values, visitor experience, and public safety would stand up under the crush of a maniacal busing scheme—but now you only have to worry about sustaining the desired conditions that complement the purpose of the park units & their management objectives."
(Individual, Oakhurst, CA, Comment #28-3)

"Further litigation has brought us to our current circumstance. The genesis of the Valley Plan is less clear to me. It contains major construction and reconstruction projects and essentially it changes the nature of the visitor experience, from one of auto touring and dispersion to one of urban bussing with concentration and regimentation. Why should this be?"
(Individual, Mariposa, CA, Comment #99-2)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. However, it is recognized that during peak visitation times, traffic on Valley roads exceed roadway and parking capacities, adversely impacting the visitor experience and other Outstandingly Remarkable Values within this segment of the river corridor. As a result, an indicator related to the amount of occupied parking versus parking capacity has been developed as part of the VERP program. This indicator will be monitored and depending on monitoring results, appropriate management actions as described in Chapter II of this document could be implemented to help ensure that the Outstandingly Remarkable Values within this river segment are properly protected and enhanced. If it were determined that a reduction in parking or private vehicles was needed, future implementation of restrictions on that capacity would be subject to further National Environmental Policy Act compliance and public involvement.

Concern 8: The National Park Service should institute more controls on visitor use on the Half Dome cables.

"I actually approve of some half dome control, because of safety. I climbed up the cable area 2 years ago and I was shocked at the recklessness of the people on the cables. You will lose a life on there soon if the line is not made more orderly."
(Individual, Los Gatos, CA, Comment #2-4)

Response: The National Park Service agrees that there is a user capacity issue related to hikers on Half Dome. The VERP program will monitor numerous indicators that look at visitor use levels, such as "Number of Encounters with Other Parties" which monitors the number of people encountered at a given time on the trail through Little Yosemite Valley. Alternative 3 of both the Draft and Final Revised Merced River Plan/SEIS prescribe a day use visitation limit to Half Dome of 800 people per day, even though this destination is outside of the Merced River corridor.

Concern 11: The National Park Service should balance today's visitor use with the sustainability of equal access for future generations in mind.

"The Merced RCMP notes that NPS uses the Visitor Experience and Resource Protection (VERP) framework as its preferred user capacity management tool. The name of this framework implies two key concerns: keeping visitors happy and protecting resources. The name also implies an adjustable balance, which is a blatantly politicized approach. Sustainability (as defined below) does not leave room for giving today's visitors leverage to achieve greater access than the future generations who are not yet here to comment for themselves. In the context of Christopher Stone's famous legal text [Should Trees Have Standing? And Other Essays on Law, Morals, and the Environment. Oceana Publications, 1996.], I put it to you that it is NPS' duty to imagine what future generations would have to say regarding an adjustable balance between current visitors' experiences and their own – and to determine that the entire point of environmental law and sustainability is that the current and future experiences should be as equal as the laws of physics and chance will allow."
(Individual, Berkeley, CA, Comment #4-3)

"As attached as we are, this issue is not about us—nor any of us here now. Yosemite comes to us from the ages and deserves to be handed down through the ages—healthy and intact—so that future generations can also be stunned and awed and experience rapture. That constituency isn't here yet and can't comment, but we encourage you to always keep them in mind. What will they think of the decisions we make now?"
(Individual, Emerald City, CA, Comment #85-1)

Response: The National Park Service administers Yosemite National Park under a series of statutory authorities passed in the late 1800s and early 1900s that include the National Park Service Organic Act of 1916. These authorities mandate that the National Park Service protect and preserve the park's natural and cultural resources while providing for the public's enjoyment of the resources "in such a means as will leave them unimpaired for the enjoyment of future generations." The mission of the National Park Service calls for allowing public use of parks, but not to the detriment of the values that make them unique. Similarly, the Wild and Scenic Rivers Act Section 10(a) calls for protection and enhancement of river values without limiting other uses to the extent that such uses do not adversely impact the values for which the river was designated.

Concern 14: The National Park Service should monitor useage of the river corridor on busy days and when limits are reached, direct visitors to other areas in the Valley.

"I want to emphasize the importance (in the preferred alternative in the Merced River Plan) of monitoring river corridor usage on busy days, and if limits are reached, then visitors will be directed to other areas in the Valley. Good Idea!!!"
(Individual, Comment #16-1)

Response: The VERP program will be monitoring numerous indicators that look at visitor use levels within the Merced River corridor. These include "Number of Encounters with Other Parties," "Number of People at Selected Sites," "Level of Traffic Congestion on Park Roads," and "Number of People Involved with Recreation Activities within the River at Selected Sites." Redirecting visitor use to other areas of the park is a management action that the National Park Service could implement if use levels exceed the established standard.

Concern 16: The National Park Service should provide more camping opportunities as described in other planning efforts.

"The Valley is becoming more exclusive! It can help aid access to join a special Interest environmental based association but this is wrong. Where are the camp grounds that were given lip service in the early Plans? What is going to change other than more limitation of camping and access? You deny it in your folksy newsletter but the reality is clearly there to those of us who care about the Valley and its true open access. I have tried in vain many times to go camping in the Valley and, except in winter, sites are unavailable. This is sad. The visitor center gets a make over but the campgrounds have lost."
(Individual, Comment #21-2)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, monitoring of the indicators and standards as part of the overall User Capacity Management Program will guide future decisions with regard to number and location of camping facilities within the Merced River corridor.

Concern 17: The National Park Service should maintain access to the river for boaters.

"In yet I'm concerned as a kayaker, just a floater down the river, that over the years our access is becoming more and more limited. And I actually think many people see the Park on an inter-tube on a kayak, something floating quietly down the river is a pretty minimal impact. I understand there is erosion and stuff taking place in certain areas. I would just like to see the Park use a common sense approach that allows visitors to use the river."
(Individual, Comment #43-1)

Response: The mission of the National Park Service is to provide for visitor education and enjoyment, and protection of the park's natural and cultural resources for the benefit of future generations. The VERP program will monitor indicators that look at visitor use levels and types of visitor recreation activities within the Merced River corridor. These include "Number of People at Selected Sites" and "Riverbank Erosion." If conditions exceed the established standards, a number of possible management actions could be taken to correct the situation. Currently, the Superintendent's Compendium for Yosemite National Park establishes regulations for use of non-motorized watercraft, including limits on the specific locations for rafting in the Merced River corridor.

Concern 18: The National Park Service should limit visitor levels in the river corridor to protect natural resources and public enjoyment.

"Preserving natural resources and public enjoyment of these resources along the river corridor is a delicate balancing act. Given that rising visitor levels are already creating negative impacts in each of these areas, it seems to me that limiting the number of people allowed to access this area is an effective step toward leaving this piece of Yosemite "unimpaired for the benefit and enjoyment of future generations."
(Individual, Carmichael, CA, Comment # 25-3)

"Protecting the Merced while allowing human use calls for a wise, but potentially difficult, decision. Such a decision would embrace legal requirements and take a long view of preservation. To do this, Yosemite needs to address what both the Ninth Circuit Court ruling and the river point to: the Merced corridor cannot sustain its current level of use, much less a higher one, without further damaging the river environment, perhaps irreparably. Even now, river degradation -- including bank erosion, ever-deepening social trails in adjacent meadows, and traffic and people jams -- is evident."
(Individual, Comment #81-2)

"The Tribes comments on the Revised Merced River Plan will still need to address the issue of visitors the Park will have if there is not a capacity limit put in place. It just seems that more and more visitors come to the park every year, which impacts everything, where will it stop!"
(Tribal Organization, Mariposa, CA, Comment #84-1)

Response: The mission of the National Park Service is to provide for visitor education and enjoyment, and protection of the park's natural and cultural resources for the benefit of future generations. Currently, the National Park Service limits visitor use in numerous ways such as the Wilderness Trailhead Quota System, the Superintendent's Compendium, governing mandates and park policies, and facility capacities. Through the VERP program, the National Park Service would monitor indicators that consider the impacts to resources from visitor use. As a result, park managers would have an obligation to take management action when use levels are found to exceed established standards. Given the type and location of a particular impact, limiting visitor use is a management action the National Park Service could implement to bring conditions back to within the established standard.

Concern 19: The National Park Service should consider a limit on commercial raft and bicycle rentals.

"And by the way -- do they have something of this sort in place for RAFTERS like that have Wilderness quotas?"
(Individual, Comment #3-21)

"As part of the 5-year study program, have Park administrators even considered stopping commercial rentals of rafts and bicycles--instead accommodating these activities only if visitors bring their own equipment? It would be very interesting to see what such a study would reveal with respect to resource and safety issues. Instead, this Revised River Plan mentions "site hardening" (aka throw down some more asphalt) as the solution..."
(Individual, Oakhurst, CA, Comment #55-38)

Response: The Revised Merced River Plan/SEIS is a programmatic plan that does not prescribe specific actions, such as limiting raft or bicycle rentals. However, the Superintendent's Compendium does prescribe a limit on the number of raft the primary concessioner can rent per day. In addition, the National Park Service has adopted the VERP program to provide information about impacts to resources and the visitor experience from visitor use. The park has selected a number of VERP indicators to monitor for the field season 2005 that will be monitoring the affects of rafting and bicycling on resource and visitor experience conditions such as "Number of People Involved in Recreation Activities Within the River Corridor at Selected Sites" and "Level of Congestion on Park Roads" (deals with pedestrian and bicycle traffic at busy intersections). Based on the results of monitoring these indicators, the National Park Service will determine whether they are providing information to park mangers in order to decide whether management actions are needed to limit either raft or bicycle rentals.

Concern 31: The National Park Service should limit the size of motor homes allowed in the park.

"[If you listened to me -- you would have]...limited the SIZE of motor homes..."
(Individual, Comment #3-22)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues.

However, Yosemite National Park does place limits on the size of recreational vehicles. Motor homes in Yosemite Valley are limited to 40 feet in length, and trailers are limited to 35 feet in length. Outside Yosemite Valley some drive-in campsites can only accommodate vehicles up to 35 feet in length.

Concern 75: The Revised Merced River Plan should only consider visitation caps that are scientifically supported.

"The Park Service hopes to scare the public into supporting Preferred Alternative 2 by inserting these visitation caps into the other alternatives. Visitation caps lacking any scientific support are manipulative and stupid; the public is not."
(Individual, Oakhurst, CA, Comment #42-5)

Response: The Final Revised Merced River Plan/SEIS has revised the annual cap on visitation in Alternative 4. Alternative 4 now proposes an annual corridorwide visitation limit of 3.27 million visitors per year, which is the level of visitation in the park when the Merced River was designated Wild and Scenic in 1987. Alternative 3 continues to have an annual corridor visitation limit of 5.32 million. The rationale behind the proposed annual corridorwide visitation limits is to provide a limit on visitation beyond what would be allowed on a daily basis so that the cumulative visitation resulting from day use would not be considerably higher than Yosemite National Park has ever experienced. There is no current data that statistically correlates an annual corridorwide visitation limit with the protection of the Merced River's Outstandingly Remarkable Values. The National Park Service has adopted the VERP program to provide on-the-ground information about impacts to resources and the visitor experience from visitor use. As opposed to the fixed limits in the Draft SEIS, the Final SEIS annual corridorwide visitation limits are more flexible. Should VERP monitoring indicate that use levels are causing standards to be exceeded in given areas, managers could take action to adjust daily segment and management zone limits as well as adjust the proposed annual corridorwide visitation limits up or down in Alternatives 3 and 4.

Concern 84: The Revised Merced River Plan should include discussion of only those management actions that are likely to be used.

"Opposition to some alternative actions such as Day Use Reservations, quotas and possible entry gate closures was dismissed as management actions unlikely to be used. The YSVB [Yosemite Sierra Visitors Bureau] contends that if this is the case, that the RMRP should not include them in any of the alternatives."
(Individual, Oakhurst, CA, Comment #49-4)

"It is with great disappointment the recent Revised Merced River Plan/EIS (RMRP) again creates the impression that Yosemite National Park is not accessible. Information conveyed by the National Park Service can greatly influence public perception, as we have experienced in the past. Point in case, the opposition to some alternative actions such as Day Use Reservations, quotas and possible gate closures was dismissed as management actions "unlikely to be used." Why include them?"
(Business, Oakhurst, CA, Comment #88-1)

Response: The Final Revised Merced River Plan/SEIS has devoted Chapter II to User Capacity Management and VERP in which a more comprehensive discussion of user capacity elements, including VERP management actions. Management actions triggered by VERP monitoring are not "one size fits all," rather the appropriate management action must be determined based on the specific conditions of the resources or visitor experience that is being affected by visitor use. Table II-3 in Chapter II provides a comprehensive list of the types of management actions park management could choose to implement depending on the degree of visitor use impact. Management actions listed in the Draft Revised Merced River Plan/SEIS were intended to serve as examples because certain types of management actions may not be appropriate to specific areas or situations. Because the Revised Merced River Plan is a programmatic document, it cannot predict and pinpoint what specific actions will be implemented in the future, as the actions taken will vary depending on the types of impacts that are found. An action taken in one situation or in one area of the park may not be effective in another. Also, as conditions change, as technology changes, and as visitor use patterns change, management strategies must change accordingly.

Concern 147: The Revised Merced River Plan should consider a reduction in user capacity in areas where Outstandingly Remarkable Values are at-risk or being degraded by visitor use.

"I think it would be reasonable, if not mandatory, to consider a reduction in capacity, particularly in areas where Outstandingly Remarkable Values are at-risk or being degraded by visitor use."
(Individual, Fort Collins, CO, Comment #73-24)

Response: Where Outstandingly Remarkable Values are at risk or determined to be degraded, park managers will take appropriate action. Reducing visitor use is only one of many possible actions presented in the management action toolbox. Depending on the type and location of impact, it may mean reducing levels temporarily during the course of the day or over the course of a season. It may also mean reducing use levels in areas where the impact is occurring. The VERP program creates room for flexibility in order to match the cause of impact with the most effective solution.

Concern 172: The National Park Service should recognize that if current use levels are degrading Outstandingly Remarkable Values, than visitation and the size and scale of infrastructure should be reduced.

"If these Outstandingly Remarkable Values are, in fact, being harmed [at present], perhaps the focus of the NPS should be to reduce visitation, and concurrently reduce the size and scale of the infrastructure needed to support those visitors."
(Individual, Fresno, CA, Comment #82-9)

Response: Where Outstandingly Remarkable Values are at risk or determined to be degraded, park managers will take appropriate action. Reducing visitor use is only one of many possible actions presented in the management action toolbox. Depending on the type and location of impact, it may mean reducing levels temporarily during the course of the day or over the course of a season. It may also mean reducing use levels in areas where the impact is occurring. The VERP program creates room for flexibility in order to match the cause of impact with the most effective solution.

Concern 215: The Revised Merced River Plan should present an alternative that reduces use in the summer and analyze different use levels at different times of the year.

"At least one alternative should analyze reduced visitor use in the summer, during the highest visitation times. The alternative should look at different visitation times during different times of year, and different use limits for various times of year. For example, in winter when the animals are stressed and need peace and quiet."
(Conservation Organization, Yosemite, CA, Comment #111-63)

Response: Analysis of different use levels at different times of year is a part of the VERP process described in the preferred alternative. Desired conditions are established based on the river's Outstandingly Remarkable Values. Indicators and standards are then selected. Inherent in the VERP carrying capacity process is the ability – or if standards are exceeded, the mandate – to adjust management actions to address the types of impacts encountered in a given area. Actions might include addressing the types and levels of visitor use—both when and where it occurs throughout the river corridor. Therefore, seasonal restrictions on use could occur. If changes in the level of use were proposed and would result in substantially different environmental consequences than were identified in this document, an appropriate level of National Environmental Policy Act compliance would be completed.

Concern 310: The National Park Service should set a limit of 20-25% of trail quota users can belong to the Sierra Club.

"Set a limit: only 20-25% of trail quota users can belong to the Sierra Club."
(Individual, Saratoga, CA, Comment #122-1)

Response: The mission of the National Park Service is to preserve and protect the natural and cultural treasures of the nation while allowing all people to enjoy and experience them. The National Park Service is a federal land management agency and does not discriminate against individuals or groups. The Revised Merced River Plan/SEIS is a programmatic plan that does not prescribe specific actions, such as limiting or guaranteeing access to the wilderness for persons affiliated with specific organizations; rather it sets a framework for decision making. The National Park Service has adopted the Visitor Experience and Resource Protection (VERP) program to provide information about impacts to resources and the visitor experience from visitor use. Based upon VERP monitoring results, the National Park Service would determine whether restricting visitor use in certain areas or park wide would be an appropriate type of management action. Any restrictions on travel, lodging accommodations, or access to any area of the park that might result from the Revised Merced River Plan/SEIS would be equally applied to all visitors, regardless of race, socioeconomic standing, or affiliation with any particular interest group. For more information, consult the "Environmental Justice" discussion in Chapter V, Environmental Consequences.

Concern 324: The National Park Service should offer free entry passes on a return visit to visitors turned away at the entrance gates.

"On peak visitor days to manually direct traffic. Offer free entry passes on a return visit either to Yosemite National Park or another National Park if visitors need to be turned away at the entrance station due to over crowding."
(Individual, Fresno, CA, Comment #128-3)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities in the river corridor. Potential actions (other than current traffic management plans) which may turn visitors away from the entrance gates, and associated actions would have to undergo the appropriate environmental review with public comment.

Concern 325: The National Park Service should publicize when it is overcrowded and people would be turned away.

"It would be helpful if visitors could be told ahead of any planned trip that it's over crowded, but I don't know how."
(Individual, Fresno, CA, Comment #128-4)

Response: Under the action alternatives, redirecting visitors away from crowded areas in the river corridor is a potential management action to protect river values. No doubt it would necessitate an affective system of communication. However, the 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 326: The National Park Service should limit personal vehicles but allow individuals who get motion sickness to enter the park in a private vehicle with a medical note.

"People who have motion sickness on buses and/or when someone else is driving should be allowed to enter by auto with a medical note."
(Individual, Fresno, CA, Comment #128-5)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts that does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. As such, the specific details of potential actions which would limit private vehicles would undergo the appropriate environmental review under the National Environmental Protection Act.

Concern 355: The National Park Service should not implement a quota system (as in Alternatives 3 and 4) since it is not connected to environmental conditions or visitor perceptions.

"We concur that Alternative 1's lack of interim capacity limits would be rejected by the courts. We also do not believe the segment quotas contained in alternative 3—especially the proposed day use limit on the trail to Half Dome—and the management zone quotas contained in Alternative 4 are appropriate since there is no connection between the quotas contained in these alternatives and either environmental conditions or visitor perceptions noted in the SEIS."
(Business, San Rafael, CA, Comment #112-2)

"[W]e believe strongly that there must be some correlation between limitations on human use and actual or potential damage to the natural resource or visitor experiences; uncorrelated quotas and limitations like those contained in Alternatives 3 and 4 are simply not justified."
(Business, San Rafael, CA, Comment #112-3)

Response: The National Park Service recognizes the concern as it relates to Alternatives 3 and 4. The Ninth Circuit Court of Appeals Opinion issued in October 2003 stated that "*...Based on the plain meaning, we do not read [the Wild and Scenic Rivers Act] to require that the administering agency advance one particular approach to visitor capacity in all circumstances (e.g., a head count of all entrants to Yosemite)...Thus we interpret [Wild and Scenic Rivers Act's] instruction that a Comprehensive Management Plan (CMP) must 'address user capacities' to require only that the CMP contain specific measurable limits on use...*"

Although many may think of a capacity as a number of people in a given area, the concept is much more complex. Research over the years has shown that user capacity cannot be measured simply as a number of people, because the potential for impacts is related not just to the number of people, but to the types of activities people engage in, where they go, what kinds of natural and cultural resources are in the area, and the way the area is managed (Marion 1998, Cole and Stankey 1997). The concept of user capacity relates to the level of use (type and amount) that an area can withstand without having an unacceptable impact on the area's values. The annual corridorwide visitation limits proposed in Alternatives 3 and 4 ensure that visitor use levels do not reach the maximum daily segment or management zones limits on most days during the year—

resulting in what the National Park Service would consider an unacceptable number of annual visitors.

Concern 362: The National Park Service should consider the use of "quotas" as limiting access into Yosemite National Park and restricting the public's right for "public use, resort and recreation."

"QUOTAS, The use of this term in the revised CMP validates my previously expressed concern for the public's right of access to Yosemite Valley, an area of Yosemite National Park that is "...to be held for all time by the United States of America for public use, resort and recreation." When you begin to address user capacities of the river corridor by setting QUOTAS, you are obviously attempting to limit the public's use for resort and recreation. QUOTAS should not be used to manage visitation in Yosemite. The use of the Wild & Scenic Rivers Act for this purpose is wrong."
(Individual, Redwood City, CA, Comment #110-1)

"It is clear that this Revised CMP of the Merced River Plan is being used to amend the adopted General Management Plan to illegally establish QUOTAS for visitation to Yosemite Valley."
(Individual, Redwood City, CA, Comment #110-6)

Response: The National Park Service recognizes the concern as it relates to Alternatives 3 and 4. The Ninth Circuit Court of Appeals Opinion issued in October 2003 stated that "*...Based on the plain meaning, we do not read [the Wild and Scenic Rivers Act] to require that the administering agency advance one particular approach to visitor capacity in all circumstances (e.g., a head count of all entrants to Yosemite)...Thus we interpret [Wild and Scenic Rivers Act's] instruction that a Comprehensive Management Plan (CMP) must 'address user capacities' to require only that the CMP contain specific measurable limits on use...*"

Although many may think of a capacity as a number of people in a given area, the concept is much more complex. Research over the years has shown that user capacity cannot be measured simply as a number of people, because the potential for impacts is related not just to the number of people, but to the types of activities people engage in, where they go, what kinds of natural and cultural resources are in the area, and the way the area is managed (Marion 1998, Cole and Stankey 1997). The concept of user capacity relates to the level of use (type and amount) that an area can withstand without having an unacceptable impact on the area's values. These values are not just limited to the cultural and natural resources but include the quality of the visitor experience and other social factors. In the Merced River corridor, relevant visitor experience and social goals are expressed through the recreational Outstandingly Remarkable Values for the river. The goals of the National Park Service and the Wild and Scenic Rivers Act both allow for public use and enjoyment of the Merced River corridor at levels that protect the natural and cultural values for which the river was deemed worthy of protection. These values include the Outstandingly Remarkable Values of the Merced Wild and Scenic River.

The annual corridorwide visitation limits proposed in Alternatives 3 and 4 ensure that visitor use levels do not reach the maximum daily segment or management zones limits on most days during the year—resulting in what the National Park Service would consider an unacceptable number of annual visitors.

Concern 365: The National Park Service should allow unrestricted access to Yosemite Valley.

"Go outside and look up. The outstanding beauty of the "Cleft" or "Gorge" is the reason that this unique place was set aside for public use as the first such state park. When I lived in Yosemite Valley and would have first time visitors there who arrived in the evening after dark, I was always pleased by their expressions of awe when morning came and they went outside and looked up. To this day, I cannot enter Yosemite Valley without looking up at Half Dome, Yosemite Falls and El Capitan. To use the ORV's of the river corridor to control public access to this place of beauty is unconscionable."
(Individual, Redwood City, CA, Comment #110-4)

Response: The mission of the National Park Service is to preserve and protect the natural and cultural treasures of the nation while allowing all people to enjoy and experience them. However, the agency is also required to implement limits on use in Yosemite through various governing mandates, park policies, and the Wild and Scenic Rivers Act. For example, restrictions on use vary from the number of people allowed in a campsite to the number of people permitted in the wilderness overnight. Current restrictions on use levels are prescribed by the National Park Service to protect public safety, natural and cultural resources, and the visitor experience. Thus, the National Park Service is unable to allow unrestricted access to Yosemite Valley. It should also be noted that according to the Wild and Scenic Rivers Act, the managing agency must institute a capacity on use in the Merced River corridor. By its very nature, a capacity connotes that an upper level must be set which would trigger management action. In some cases, this action could result in some restrictions on use—whether localized or by corridor.

Concern 399: The Revised Merced River Plan should specify how a permit system for specified areas around the river would work.

"Alternative 2 also suggests the use of required permits around selected river areas. There is a danger is that these permits might inhibit the flexibility of climbers to travel and climb in these areas. The plan should better detail exactly how these permits might work. The NPS has an interest in keeping the policies and requirements of issuing permits transparent because it will maintain the transparency goal of VERP."
(Non-Governmental Organization, Mill Valley, CA, Comment #119-4)

Response: The Revised Merced River Plan is a programmatic document that sets the broad policy guidance and frameworks for management of future activities in the Merced River corridor. It is not possible to present or analyze detailed implementation plans for *potential* future management actions As park managers decides on specific management actions to be implemented to address use-related impacts under the VERP program, detailed implementation projects would be initiated at that time with appropriate levels of National Environmental Policy Act compliance.

Concern 457: The National Park Service should not allow Recreational Vehicles in the Valley.

"[N]o RV hookups."
(Individual, Oakhurst, CA, Comment #55-29)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts that does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. As such, limitations on Recreational Vehicles in the Valley were not considered as part of this planning process but may be considered as part of future planning efforts. Any future park projects would be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public comment.

Concern 460: The Revised Merced River Plan should facilitate a positive visitor experience by managing for a maximum of 25 people on a trail at one time, and fewer than 20 people on a 40' x 100' beach.

"My expectations of a visitor experience and expectation in this process, relating to the "Yosemite Valley Corridor" specifically, is a sense of solitude represented by seeing and passing 25 people or less on the trail I'm on....I would expect fewer than 20 people on a 40'X100" beach."
(Individual, Mariposa, CA, Comment #87-3).

Response: The National Park Service recognizes the concern as it relates to Alternatives 4, however management zone limits apply to the entire acreage of a certain type of management zone and are not specific to individual areas within a zone such as a beach. The number of people on a given trail at one time is not being analyzed in this document, though is being monitored through the VERP program. Should monitoring result of VERP determine that a limit on use should be implemented on specific trails, the appropriateness of that type of management action will be evaluated within the context of VERP and the Wilderness Trailhead Quota System.

Reservation System

Concern 9: The National Park Service should limit the number of tour buses.

"As for the RIVER PROTECTION -- you keep mentioning the numbers of people and how you control them by education, numbers of lodging etc., all well and good, but it has been my experience in more recent years that one of the worst impacts on the numbers of people that come in the park are from the increase of TOUR BUSES-- huge tour buses that bring people in droves for the day and don't even have time to experience the park except on a superficial level. I am not naive enough to think that this isn't going to continue, but I do think a good place to start is to limit the number of tour buses that can come in to the valley on any given day (even though they bring money to the concessions)-- yes a QUOTA ON BUSES or pre-reservation system for buses."
(Individual, Comment #3-8)

"Now the Merced River Plan is in your hands -- you tell us; we are turning to you for the next phase of development." I bet! I don't mean to sound cynical, but I guess I am. If you listened to me -- you would have...limited the numbers of tour buses."
(Individual, Comment #3-14)

"The tour busses are just overwhelming. If you want to hear complaints, ask about the tour busses. In the first place, most of those tour busses come in from out of state using out-of-state diesel fuel. They are not even using fuel that's here in California that requires a lower sulfur content. You can also monitor vehicles' emissions. There's no reason to allow vehicles in the Valley that are gross polluters."
(Individual, Citrus Heights, CA, Comment #95-5)

Response: Buses generally enter and leave the park through different entrance stations, and stop at major features, such as the Mariposa Grove, en-route to Yosemite Valley. Tour buses typically stop for only a few minutes at these popular Yosemite Valley features. As a result, visitors arriving by bus tend to be concentrated in developed areas of the park that provide adequate space for bus parking and have hardened surfaces for walking to view popular features such as Yosemite Falls, Bridalveil Fall, Tunnel View, and the Yosemite Lodge area. Visitors in organized tour groups largely do not have the time to explore undeveloped areas and typically do not stray far from the tour guides or bus.

Alternative 2 does place an interim limit of 92 buses (buses include commercial tour buses, YARTS buses, school buses, etc.) per day. Alternatives 3 and 4 do not propose limits on buses. Under Alternative 2, at the end of the interim period, the National Park Service would evaluate the VERP program's effectiveness in providing park managers with the information needed to manage visitor use in a manner that protects and enhances the Outstandingly Remarkable Values. Based on this evaluation, park managers would present a report to the public documenting how the VERP program has provided the required guidance on visitor use levels and whether facility limits should be continued, modified, or eliminated. If changes proposed at this time would result in substantially different environmental consequences than were identified in the Final Revised Merced River Plan/SEIS, an appropriate level of National Environmental Policy Act compliance would be completed.

Concern 10: The National Park Service should limit day use, potentially through a reservation system, especially during peak periods.

"I am also not opposed, as many are, to PRE-RESERVATIONS FOR DAY USE during the SUMMER HOLIDAY WEEKENDS. After all, one has to reserve even dinner and theater reservations at most places in California so why not ask people to think about when they are coming up on these highly impacted weekends."
(Individual, Comment #3-9)

"Initially the [day use reservation] system would be used only during peak use periods when visitation is expected to exceed capacity. This process should begin with a public awareness and education program describing the need and a system that would guarantee day use entry once a reservation system is in place. Emphasis must be made that a day use reservation system is not designed to limit access it is designed to guarantee access!...A day use reservation system is not only long overdue it is ultimately the only solution to the recreational demands of exploding population growth in near-by central valley and foothill communities...The resulting chaos extant during [peak] period[s] will surly return if a reservation system is not implemented. The system will protect Park resources and insure a quality visitor experience in Yosemite Valley and will help to satisfy the Ninth Circuit Court's directives."
(Individual, El Dorado Hills, CA, Comment #27-8)

"To achieve this level of visitation a system of day-use permits may be necessary for day-use visitors. As a start, on high use visitation days such as holidays and weekends, a program could be established for day-use permits. For years now, permits for entrance into the backcountry wilderness have been required to lessen the impact on the resource and seems to be working."
(Conservation Organization, Oakland, CA, Comment #75-4)

Response: The National Park Service, per the Superintendent's Compendium, has the ability to redirect visitor use in Yosemite Valley during peak visitation periods, such as holiday weekends, and has done so in the past. In the event that visitor use levels reach capacity, the National Park Service would implement a communications strategy to provide information to local and region communities. Limiting visitor use through a reservation system is a type of management action the park could implement if VERP monitoring were providing information that adverse impacts are occurring to resources and/or the visitor experience. If a reservation system were to be implemented, further National Environmental Policy Act review and public involvement would be required.

Concern 144: The Revised Merced River Plan should consider a range of wilderness trailhead quotas for the trailheads that feed the Merced River corridor.

"Why not consider a range of entrance quotas for the trailheads that feed the Wild and Scenic River?"
(Individual, Fort Collins, CO, Comment #73-19)

Response: Yosemite National Park's existing Wilderness Management Program regulates use in wilderness primarily through the Wilderness Trailhead Quota System. This system has been in place since the 1970s. Over time, and supported by the results of the Wilderness Impact Monitoring System (WIMS), this system has demonstrated that it protects both the visitor experience and the park's natural and cultural resources. It limits and disperses visitor use to provide a quality visit while not causing unacceptable impacts to wilderness resources. In addition, responses from the public during this planning effort have indicated that the existing Wilderness Trailhead Quota System is properly functioning. Given the above, there is no need or justification to consider a range of wilderness trailhead quotas that feed the Merced River corridor.

Concern 159: The National Park Service should consider requiring day-use permits for popular destinations in the river corridor, similar to wilderness permits.

"Management actions might include requiring day-use permits for Half Dome and other popular areas along the river. Day-use permits could be explained and interpreted as wilderness permits currently are."
(Individual, Comment #81-4)

Response: Requiring day-use permits to popular attraction areas is one of the many potential management actions that could be implemented to protect river values if VERP monitoring were providing information that adverse impacts were occurring to resources and/or the visitor experience. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 298: The Revised Merced River Plan should not include potential management actions that limit public access to Yosemite National Park.

"It is my hope that the plan will not limit the number of visitors..."
(Individual, Modesto, CA, Comment #108-1)

"Further, I remain deeply concerned that Yosemite National Park is becoming less accessible to the public. Possible day-use reservations, quotas and entry-gate closures should not be included in the DRMRP as they are counter to a positive visitor experience and contribute the existing belief that Yosemite is becoming less accessible to the public."
(Federal Agency, Washington, DC, Comment #136-7)

Response: The National Park Service has adopted the Visitor Experience and Resource Protection (VERP) program to provide information about impacts to resources and the visitor experience from visitor use. Based upon VERP monitoring results, the National Park Service would determine whether indicators are providing information to park managers about impacts to resources or the visitor experience caused from visitor use. Depending on the level of use resources and the visitor experience can sustain, the type of management actions that could limit visitor use may be implemented to minimize or eliminate adverse impacts. However, the National Park Service has the ability to implement numerous types of management actions, and limiting visitor use may not be appropriate in every situation.

Concern 371: The National Park Service should consider the potential management actions of "entrance station quotas" and/or a "day use reservation system," as lacking sufficient public comment due to the inconsistent information the National Park Service has provided on the subject.

"The public comment process on this very important issue [quotas and gate closures] has been so severely compromised as to render it null and void. Whether you call it "user capacity" or "entrance station quota" or "reservation system", it is all getting at what should have been at the very heart of the DRMRP process. It is the one issue which people have been searching for in the document. To the extent that they might have found anything, they have been misled or confused or both. This part of the process clearly is not compliant with NEPA. That is unfortunate, because it is at the heart of the Ninth Circuit's direction to address user capacity."
(Conservation Organization, Fresno, CA, Comment #113-12)

Response: The National Park Service has adopted the Visitor Experience and Resource Protection program to provide information about impacts to resources and the visitor experience from visitor use. In the event that resources and the visitor experience are being adversely impacted by visitor use, the National Park Service has an obligation to take action to lessen or remove impacts. Entrance station limits and/or a day use reservation system are types of management actions the park could implement (see Chapter II for a list of other potential management actions). However, limiting visitor use through a reservation or permit system would require further National Environmental Policy Act review and public involvement.

Special Populations Access

Concern 311: The National Park Service should limit or restrict access of foreign visitors before restricting the access of U.S. citizens.

"If people visiting the park, or a section of the park are to be turned away or limited, then those who are not U.S. Citizens should be the ones first turned away or redirected. Give citizens priority."
(Individual, Saratoga, CA, Comment #122-2)

Response: The mission of the National Park Service is to preserve and protect the natural and cultural treasures of the nation while allowing all people to enjoy and experience them. The

National Park Service is a federal land management agency and does not discriminate against individuals or groups based on ethnicity. The Revised Merced River Plan/SEIS is a programmatic plan that does not prescribe specific actions, such as limiting certain types of citizen access to Yosemite National Park; rather it sets a framework for decision making. The National Park Service has adopted the Visitor Experience and Resource Protection (VERP) program to provide information about impacts to resources and the visitor experience from visitor use. Based upon VERP monitoring results, the National Park Service would determine whether restricting visitor use in certain areas or parkwide would be an appropriate type of management action. Any restrictions on travel, lodging accommodations, or access to any area of the park that might result from the Revised Merced River Plan/SEIS would be equally applied to all visitors, regardless of race, socioeconomic standing, or country of origin. For more information, consult the "Environmental Justice" discussion in Chapter V, Environmental Consequences.

Environmental Justice

Concern 20: The National Park Service should encourage the development of affordable and equitable accommodations and equal access to recreation opportunities.

"I represent four generations of family, my grandparents, my parents and now I have grown children. Every one of us enjoys a few of the basic things; number one, we like to go to sleep -- we used to like to go to sleep watching the fire flies. We can't do that now, so we go to sleep watching the stars and trying to listen to the river. We like to wake up hearing the birds, seeing Glacier Point and hearing the river. We're farther and farther away. The river sites are very skimpy and it's harder to do that. And for that one week at a time where it used to be unlimited, now we have one week at a time. The rules are multiplying. We've had a barrage of bear management, camp hosts shining flashlights in our eyes, you know, kicking the fires out."
(Individual, Santa Monica, CA, Comment #39-6)

"All documents appear to lead to the conclusion that at the end of the 5-year interim period, camping in Yosemite Valley will return to the pre-decisional number outlined in the Valley Plan: 330 drive-in sites (not the 684 mentioned in the GMP); and 170 walk-in/walk-to/group sites (not the 72 mentioned in the GMP); a grand total of 500. This is substantially less than the 756 campsites proposed in the 1980 GMP and a drastic reconfiguration--cutting low impact, inexpensive, drive-in family campsite opportunities by more than 50%. Guess the GMP capacity goals for camping didn't fit with the current administrative agenda…"
(Individual, Oakhurst, CA, Comment #55-19)

"Low-impact campgrounds should be restored along the upper and lower Merced River to ensure those of minimal economic means can visit and experience Yosemite."
(Federal Agency, Washington, DC, Comment #136-3)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions related to the development of affordable and equitable accommodations. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Visitors to the park can experience a wide range of recreational opportunities, and a goal of the park's User Capacity Management Program is to ensure that the quality of the visitor experience in the river corridor, which in part includes enjoying recreational opportunities, is maintained for all in a manner that protects and enhances the Merced River's Outstandingly Remarkable Values.

Concern 451: The Revised Merced River Plan should gather quantitative studies that depict low income and non-Anglo recreation patterns to better inform park decisions.

"SOCIAL JUSTICE. Scoping letters overwhelmingly expressed concerns about elitism and how the Park was evolving into a resort experience that only the wealthy could afford. According to the Valley Plan, "It is generally believed that low-income and minority visitors to the park are underrepresented in the total visitor population. However, the overnight accommodation and recreation patterns of low income and minority park visitors have not been studied in detail. As a result, the impacts on low-income and minority overnight and day visitors cannot be analyzed quantitatively" (Final YVP/EIS, Volume 1B, page 4.2-247). The Valley Plan further states "the largest percentage of visitors to Yosemite National Park (26%) have an annual household income greater than $100,000. The smallest proportion of visitors (5%) have an annual household income of less than $20,000. By contrast, in the State of California the largest percent of the population (37%) has an annual income below $20,000. The data illustrate that people from low-income households are largely underrepresented in the population of visitors to Yosemite... This is true on both a statewide and regional basis" (Final YVP/EIS, Volume Là, page 3-156/7)."
(Individual, Oakhurst, CA, Comment #55-39)

"As a publicly funded entity, the national parks must serve ALL Americans. It appears that many of the plans and policies now advocated in Yosemite are facilitating economic discrimination. Quantitative studies with respect to recreational patterns of low-income and non-Anglo populations are critical to future land-use management zoning and user capacity determinations and should inform Park administrators' decisions. Where are those studies and why aren't they informing not only a Revised River Plan but all future planning documents?"
(Individual, Oakhurst, CA, Comment #55-43)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

The park's User Capacity Management Program has been designed without regard to visitor income levels or ethnic background. It is a program the park will implement to measure and manage the impacts of use from visitors, employees and residents in the river corridor to ensure that the river's Outstandingly Remarkable Values will be protected and enhanced for the future enjoyment of all.

Furthermore, in the summer of 2005 the National Park Service will conduct a Visitor Use Survey designed to gain information about visitor use patterns and overall visitor satisfaction in Yosemite

National Park. This very comprehensive survey will be distributed throughout the park. This will help to broaden the understanding of recreational and overnight use by various demographics, and will be used to inform future planning efforts.

Special User Groups

Concern 22: The National Park Service should set aside improved camping areas for school groups.

""Now the Merced River Plan is in your hands -- you tell us; we are turning to you for the next phase of development." I bet! I don't mean to sound cynical, but I guess I am. If you listened to me...You would not house school groups at Camp Curry but have maintained group camping areas for them, or if you did house them at Curry then they should be the only ones residing in those particular areas and it should be better set up for this kind of use with group meeting places for the evening and education."
(Individual, Comment #3-19)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts and does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. Any future park project to improve camping areas for school groups would be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public comment. Part of this environmental review would include assessing the potential impacts on visitor experience.

Recreation

Concern 150: The Revised Merced River Plan should reexamine the recreation economic impacts on the regional economy.

"In the "Regional Economy" discussion of the Environmental Consequences, it is reported that under the current situation the regional economic impact is $238.8 million dollars given the current 3.6 million annual visitors. Thus, it would appear that the potential economic impact of alternatives 3 and 4 would be substantially larger given a 5.3 million annual user capacity. Yet, in the Environmental Consequences, the SEIS indicates that under Alternative 3 and 4 it is projected that the visitation will decline compared to Alternative 1, and there will be a loss to the regional economy (pages IV-306 and IV-397, respectively). This is confusing and I suspect not factually accurate. I recommend you reexamine the SEIS on this matter, and considerably expand your regional recreation demand and economic analysis given the considerable amount data that has been provided by your consultants."
(Individual, Fort Collins, CO, Comment #73-28)

"I believe your recreation demand analysis [in the Environmental Consequences discussion] is lacking, which of course feeds into your regional economy analysis. I recommend a chart or table that depicts the past 20 years of annual visitation and projected future recreation demand for the next 20 years based upon a reasonable range of a 3%-6% annual increase in visitation. The decision maker and public needs to understand that your annual visitation is likely to pass the 5.3 million mark you use in Alternatives 3 and 4 in a short 10-12 years by my calculations."
(Individual, Fort Collins, CO, Comment #73-29)

Response: The Revised Merced River Plan/SEIS is a programmatic document and provides broad policy guidance for future management of the Merced River corridor. The effects of this plan's guidance on visitor levels and visitor spending are very difficult to predict or evaluate. Visitation would not necessarily grow continuously, as illustrated in the mid-1990s when visitation peaked at over 4 million, then proceeded to drop to 3.37 million in 2004. Therefore, the economic analysis contained in this Final Revised Merced River Plan/SEIS consists of a subjective evaluation of how the economic effects of each proposed action alternative would differ from the effects of continuing current management practices. The future level of visitation could be influenced by the VERP program, but it is impossible to estimate what future visitation levels will be under VERP. In the alternatives that include specific daily or annual visitor limits or caps, it is assumed that these caps could limit future growth in visitor levels as compared to having no limits.

Concern 26: The National Park Service should prioritize visitor recreation useage over preservation of its wild and natural state.

"If could choose between the Merced river being either wild and natural and used less for recreation, or beautiful (as it currently is), and used more for recreation, I would choose the later. After all, the primary reason people come to Yosemite is to enjoy the beautiful views and hiking -- the Merced River's condition (within reason) is a secondary concern; but it's fun to swim in, raft down, hike along, and camp nearby."
(Individual, Kensington, CA, Comment # 7-3)

Response: The National Park Service administers Yosemite National Park under a series of statutory authorities passed in the late 1800s and early 1900s that include the National Park Service Organic Act of 1916. These authorities mandate that the National Park Service protect and preserve the park's natural and cultural resources while providing for the public's enjoyment of the resources "in such a means as will leave them unimpaired for the enjoyment of future generations." The mission of the National Park Service calls for allowing public use of parks, but not to the detriment of the values that make them unique. Similarly, the Wild and Scenic Rivers Act Section 10(a) calls for protection and enhancement of river values without limiting other uses to the extent that such uses do not adversely impact the values for which the river was designated.

Climbing and Mountaineering

Concern 360: The National Park Service should review the Denali National Park study of backcountry encounters (when complete) to better understand climbers use of the wilderness versus other use of the wilderness.

"The AAC has pushed for and helped fund and direct a scientific study of backcountry encounters in Denali National Park in the hope of finding out exactly how climbers differ from other wilderness recreational visitors in their perception of encounters. We hope the study helps develop new management approaches that may be more fruitful for protecting wilderness solitude without resorting to subjective and ultimately flawed indicators and standards."
(Business, San Rafael, CA, Comment #112-13)

Response: Park planners, scientists, and resource managers benefit from the experiences and programs used in other parks. However, every park area is unique, with different resources and different types of visitor use. As part of the Revise Merced River Plan/SEIS process, the planning team looked to numerous methods for addressing the impacts of visitor use—including the various tools used within the National Park System and in other land management agencies. The National Park Service has adopted the Visitor Experience and Resource Protection (VERP) program to provide information about impacts to resources and the visitor experience from visitor use. As part of this process, Yosemite National Park resource managers have adopted a set of indicators specific to the Merced Wild and Scenic River as presented in the Revised Merced River Plan/SEIS. These indicators are directly linked to the protection and enhancement of the river's Outstandingly Remarkable Values—qualities unique to the Merced River corridor. Based on VERP monitoring results, the National Park Service would determine whether indicators are providing information to park managers about impacts to resources or the visitor experience caused from visitor use, such as climbing. Because VERP is a dynamic and iterative process, as new information is available the National Park Service will have the ability to further refine VERP.

Visitor Services

Concern 87: The National Park Service should consider the low impacts associated with camping.

"The impacts that we've seen over the years as far as result of our use, my family, my 30 to 40 cousins and uncles and aunts and brothers and now children, has been minuscule compared to the impact of what the National Park Service, or the Yosemite park people, have deemed what the park needs to have done for our better experience."
(Individual, Comment #45-1)

"In this plan, it talks a whole lot about the negative impacts of "visitors" on "park resources"; while the unfortunate reality is that in recent years, it is the Park Service and its plans and projects which have made the most negative and significant degradation and destruction of the River's Outstandingly Remarkable Values. While the NPS worries about some "trampling" from visitors walking, it appears to be completely ignoring the incomparable and vastly greater impacts from a myriad of projects, such as the bulldozing along the Merced River Gorge."
(Individual, Comment #93-9)

"We campers are not your problem- we are amazed at how many people are dragged in by bus; they drop their money in the stores and then bussed out again within hours of their arrival. It's like a revolving door"
(Individual, Comment #130-2)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

The park's User Capacity Management Program has been designed without regard to the type of visitor coming to Yosemite National Park type or the type of recreation visitors may become involved with. It is a program the park will implement to measure and manage the impacts of use from all users (visitors, employees and residents) in the river corridor to ensure that the river's Outstandingly Remarkable Values will be protected and enhanced for the future enjoyment of all.

Concern 320: The National Park Service should consider how good facility design can manage adverse impacts of visitor use.

"Additionally, we note that many resource management textbooks have been written on facility design and visitor rules that can effectively manage the adverse impacts of visitor use and discourage excessive visitor use without requiring a staff-intensive effort to monitor and police visitor quotas...Thus for most wild and scenic river management situations, the design approach will often prove best."
(Conservation Organization, Sacramento, CA, Comment #116-12)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts that does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. Future planning efforts will evaluate a variety of facility designs and will take into account the mitigation of visitor impacts. The VERP program is one component of the park's larger resource and visitor management programs that has the ability to affect land use planning and facility placement within the river corridor. Land use planning covers a wide range of issues, some of which are not directly impacted by visitor use. However, in land use planning, information gathered through resource monitoring programs, such as the VERP program, are used to assist in land use decisions. These monitoring programs affect land use planning by providing information on resources and visitor experience. In addition, the VERP program can improve the understanding of how various land use decisions affect visitor use levels and behaviors, and how those changes may affect other desired conditions. The National Environmental Policy Act process will continue to be the framework used to evaluate land use changes and associated implementation projects, but the VERP program will in the future provide much needed information related to visitor patterns and levels to support land use planning.

Although VERP does not drive land use planning in general, many of the management actions that could be implemented as a part of the VERP program can affect land uses, especially those related to infrastructure for visitor services. So, in one sense, the VERP program may drive land use changes because data from monitoring indicates a need to make adjustments to infrastructure or services to better meet desired conditions (e.g., resize parking areas, realign sections of a trail).

Concern 28: The National Park Service should restore lodging and camping to pre-flood levels.

"My number 2 concern is that you raise the lodging and camping levels back to the pre-flood level. None of your plans do that."
(Individual, Los Gatos, CA, Comment #2-2)

"My concern is that many campsites were destroyed, not by floods, but by aggressive acts of overzealous eco-extremists. Those are the river campgrounds... I understand the need to protect the Wild and Scenic River but camping facilities and hotel rooms have been removed by the hundreds in the name of "saving the river from ourselves.""
(Individual, Comment #21-1)

"Even more disconcerting is the sleight of hand with which these numbers are presented in the Plan (and in the press): ". . . Camping would be allowed to increase by 162 sites to a total of 628 sites. This level would be well below the number of campsites that existed in the Valley prior to the 1997 flood" (page 11-34). Scoping letters overwhelmingly demanded a reevaluation of camping opportunities and in fact, the scoping history section claims to have addressed access to camping in this document. Without a closer examination of how the numbers add up (and subsequently disappear), park administrators are trying to appear as if they "heard" the public outcry and are doing something about it. Nothing could be farther from the truth."
(Individual, Oakhurst, CA, Comment #55-20)

Response: The Revised Merced River Plan/SEIS is a programmatic plan that will guide future planning efforts, however does not dictate specific actions, including those related to lodging and camping. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. The park's User Capacity Management Program will measure and manage the impacts of use from visitors, employees and residents in the river corridor to ensure that the river's Outstandingly Remarkable Values will be protected and enhanced for the future enjoyment of all. Any future park projects in the Merced River corridor, including those that include lodging and camping proposals, will have to be compliant with requirements of the 2000 Merced River Plan as revised by this document. In addition, future projects of this nature will undergo the appropriate level of National Environmental Policy Act compliance and public involvement.

Concern 29: The National Park Service should prioritize the restoration of camping accommodations over an increase in lodging accommodations.

"I would like the camp sites destroyed by the 1997 flood to be restored. The Merced should be maintained as it currently is (I think it is nice in its current condition, bridges and all), and the destroyed campsites should be restored."
(Individual, Kensington, CA, Comment #7-2)

"Interim facility capacity outlined in the Revised River Plan is 1,262 units--which as noted in the Congressional Report on the Flood Recovery Request (3/26/97) was right in line with the GMP proposed lodging goals: "In other words, if the Federal government does not spend $28 million to build new revenue- generating facilities for the concessioner, the goal of reducing lodging accommodations to the level identified in both the General Management Plan and the Concession Services Plan will be achieved. . . " But apparently, Park administrators and the concessioner had other ideas as to how lodging should be reconfigured to maximize profit."
(Individual, Oakhurst, CA, Comment #55-22)

"I'm very concerned about the overnight visitor population in Yosemite valley. With the time allotted, I want to focus mainly on the campsite issue. The 1980 General Management Plan called for an overnight camping population of 3252 people. Existing campsites currently provide for 2034 persons. Interim RNP numbers document, we're discussing today, are 2934. Yet, the valley plan calls for 2340..It needs to be noted that the GNP numbers are reflected in removal 116 campsites and 268 lodging units for the purpose of protecting river banks of Merced river."
(Individual, Ahwahnee, CA, Comment #96-3)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts that does not dictate any specific action nor does it establish priorities regarding land use objectives. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. Any future park projects would be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public comment.

Concern 331: The National Park Service should relocate Housekeeping Camp.

"Housekeeping campsite has tents too close to the river. This area should be (tent use) moved further from the river."
(Individual, Fresno, CA, Comment #128-10)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. The issues relating to the relocation of Housekeeping Camp raised by this concern will be addressed as appropriate, in future implementation plans.

Concern 44: The National Park Service should focus on returning the number of drive-in campsites in Yosemite Valley to the level recommended in the General Management Plan.

"In summary, Park administrators' allegiance to the 7,711 overnight visitor capacity in the 1980 GMP on the surface appears insincere. However, the Revised MRP does leave the door open with such statements as: "Management actions taken in areas zoned for intensive use could include additional visitor services." If there are any such plans for expanding services, the focus should be on returning the number of drive-in campsites in Yosemite Valley to the level recommended in the GMP"
(Individual, Oakhurst, CA, Comment #55-28)

Response: The Merced River Plan prescribes that, in Camping (3A) zones, use will be directed away from sensitive areas and river access will be provided via trails to direct visitors to areas better able to withstand heavy use. It further states that in these zones, access will be facilitated with development such as trails and restrooms, and there will be a moderate to high tolerance for resource impacts in localized areas. The desired conditions prescribed for Camping (3A) zones within the river corridor places an emphasis on integrating the protection and enhancement of biological and cultural Outstandingly Remarkable Values, with the diversity of recreational Outstandingly Remarkable Values. Thus, placement of additional campsites in Yosemite Valley is consistent with the approved management zone objectives associated with desired conditions.

The General Management Plan called for a reduction of 116 campsites from existing levels in 1980 which was 872 campsites, to the proposed level of 756 campsites in Yosemite Valley; most of them within the Merced River corridor. The Final Revised Merced River Plan/SEIS proposes 638 campsites for Yosemite Valley in Alternative 2, which is a further reduction from the General

Management Plan proposed levels. However, the numeric approach to managing carrying capacity within the river corridor will be amended by this plan through the VERP program. Indicators and standards have developed to monitor achievement of the desired resource and social conditions within the river corridor, and will continue to be refined over time. Adjustments to location, number, and infrastructure will be made when warranted. It is anticipated that relocation of certain campsites from sensitive areas will serve the resource goals of both the General Management Plan and the Merced Rive Plan, both of which provide guidance for the Yosemite Valley Plan. Therefore campsite relocation and expansion of the current inventory fulfills goals and works towards achieving desired conditions within the river corridor.

Site Design and Landscaping

Concern 32: The National Park Service should improve lighting at Yosemite Lodge.

"Now the Merced River Plan is in your hands -- you tell us; we are turning to you for the next phase of development." I bet! I don't mean to sound cynical, but I guess I am. If you listened to me...You would have insisted on improved lighting for paths at the lodge for guests."
(Individual, Comment #3-17)

Response: The National Park Service has developed Design Guidelines for Yosemite Valley, which include lighting guidelines, that account for not only the protection of visitor safety, but for the protection of a dark night sky. The issue of lighting at Yosemite Lodge was addressed in the Lodge Area Redevelopment Project Environmental Assessment completed in 2003. The Revised Merced River Plan is a programmatic plan that will guide future planning efforts that does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. Any future park projects to address site design would be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public comment.

Health and Safety

Concern 89: The National Park Service should provide information upon entry of the park on the risks associated with drowning in the river.

"VISITORS SHOULD BE MADE AWARE OF THE RISKS OF DROWNING IN THE RIVERWHEN THEY ENTER THE PARK."
(Individual, Comment #54-2)

Response: Messages regarding river safety have been distributed throughout the park for years. Important safety information is included in free visitor publications handed out at entrance stations and visitor centers. Included in these publications are sections detailing how to be safe around bodies of water, including the river.

National Park Service Interpretive Services

Concern 235: The National Park Service should educate the public on how to enjoy Yosemite National Park without degrading resources.

"Public Education in which the visitor is "encouraged" to make certain decisions based upon information regarding anticipated experiences (i.e. potential crowds) should be the primary management tool employed before the implementation of specific restrictions and limits."
(Conservation Organization, Oakland, CA, Comment #69-10)

"Any Plan to be effective needs to have an interaction between Park Service interpreters and the public. The public needs to be informed as how best to interact with the wonders of Yosemite and how best to visit this wonderful place. People need to be informed as to why they should not tramp across the meadows, pick the flowers and feed the bear or deer."
(Conservation Organization, Oakland, CA, Comment #75-10)

"Be proactive about education as well. Interpretive Rangers already work hard, but they are too few and need more support. (Yes, the current Administration has pinched NPS—and we're mad about that—but we're all holding up our best visions here, aren't we?) Anyone so blessed as to visit the Valley—and certainly anyone living there (various employees)—should be apprised of the proper way to treat this International Treasure. People usually don't mean to cause damage, and often don't even know that they are."
(Individual, Emerald City, CA, Comment #85-5)

Response: Fostering a sense of stewardship among visitors to Yosemite National Park is central to the mission of the National Park Service. In Yosemite, visitors learn about the importance of protecting natural and cultural resources through numerous park publications, exhibits in visitor centers and in wayside locations throughout the park, through guided interpretive walks and talks, and through impromptu encounters with rangers. As part of the park's VERP program, continued education and awareness is a key part of the management action toolbox. For more on the relationship of interpretation/education and resource protection, see Chapter II of this document.

Concern 335: The National Park Serviced ranger-led walks should not encroach in the meadows.

"Ranger led walks should not encroach in meadows. Visitors attending these walks need to be reminded to stay on boardwalks and/or paths."
(Individual, Fresno, CA, Comment #128-14)

Response: Resource protection is the job of every employee in Yosemite National Park. When leading groups, rangers and other interpreters are mindful of staying on trail to protect meadows and other sensitive areas. This in turn becomes part of their educational message about how visitors can become good stewards of their national parks.

Concern 117: The National Park Service should complete the Yosemite Transportation Center exhibit in El Portal.

"Recommendation: That the Yosemite Transportation Center be placed in the active park program once more. That adequate space be found for it and the exhibits be completed as planned."
(Individual, Comment #10-3)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, this public concern is not within the scope of this document.

Other Services and Facilities

Concern 337: The National Park Service should hand out or rent scoops and bags for visitors to pick up their pets' waste.

"Hand out or rent out scoops and bags for visitors to pick up after their pets doo doo."
(Individual, Fresno, CA, Comment #128-16)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts that does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. While pets are not excluded from Yosemite National Park, they and their human companions have rules to live by. Included is picking up and disposing of waste appropriately. This message is presented in many of the park's free visitor publications available at park entrances and visitor centers. Regulations regarding pets are not within the scope of this planning effort.

Concern 450: The National Park Service should take responsibility for impacts associated with commercial rafting because they have allowed the concessioner to market recreation activities.

"We do not understand why the NPS would allow the concessioner to operate a busy raft concession that accelerates severe erosion of the river bank alongside Stoneman Bridge; drive huge diesel vehicles through peaceful Sentinel Beach wiping out picnickers (guess they aren't of the same financial priority to the concessioner) while ultimately degrading the entire area. Though the concessioner may profit from rentals, concessioner profits should not determine park policy. And as we feared the NPS is now using these areas as examples of damage caused by visitors to justify why more restrictions must be implemented--when it's really a situation of "cause and effect" as initiated by the Park' s own concessioner as Park administrators look the other way."
(Individual, Oakhurst, CA, Comment #55-36)

"This leads to the discussion as to whether the National Park Service should be in the business of "marketing" recreation (e.g., raft rentals, bicycle rentals, fishing/backpacking/mountaineering sales) or merely "accommodating" recreational activities for those who supply their own equipment. The ready availability of Park rentals, pandering to impulse decision-making by visitors, serves to increase activity in sensitive areas, resource "wear and tear," and potential safety issues. Conversely, if rentals are not available, visitors self-select their participation in a recreational activity based on whether or not they've chosen to go through the hassle of bringing/supervising their own equipment. The visitors themselves voluntarily reduce the impacts as opposed to the Park issuing more restrictions."
(Individual, Oakhurst, CA, Comment #55-37)

Response: The National Park Service does currently limit the number of commercial rafts that can be rented per day by the park concessioner to 100 per day. There is currently no limit on private raft use in Yosemite Valley. One of the 2005 field season VERP indicators will be monitoring the type and number of people associated with specific recreation activities, such as rafting, along the Merced River.

Transportation

Concern 90: The Revised Merced River Plan should include on data from historic peak years (as described in the Yosemite Valley Plan) instead of using only recent data in Chapter 3.

"In the same manner alluded to above in items 9 and 10, p. III-141, Table III-21: 2003 Yosemite Valley Energy Consumption, relies upon another low year compared with the years cited in the 2000 YVP. Again, this is misleading because it avoids what any third grader could deduce: that energy consumption will increase proportionally when visitation increases above the levels seen in only the past 7 years. The data cited is therefore inadequate to its intended purpose. The DMRCMP does not contemplate or attempt to bring about adequate annual reductions in energy usage."
(Individual, Fremont, CA, Comment #51-14)

"Once again, as in items 9, 10 and 13 above, traffic data cited from 2003 on p. III-111, "Average daily traffic volumes in August 2003 were about 4,750 vehicles on Southside Drive and 4,790 vehicles on Northside Drive (NPS 2003a)" is misleading because data was cited from a low year compared to historic peak years referenced in the YVP."
(Individual, Fremont, CA, Comment #51-15)

"The same misleading jargon applies to the current number of bus parking spaces per day also cited on p. D-4, Table D-2 and in Footnote c. Commercial/Noncommercial Buses Limited/Managed to Existing Parking Interim Limit: 38 bus parking spaces used to manage 92 buses per day." Footnote c states, "Current number of bus parking spaces in Yosemite Valley (per Cindy Miller, NPS Traffic Management, December 2004) used to manage 92 commercial or transit buses per day (estimate based on commercial bus use August 1996 and transit bus use of August 2000); also see p. IV-161." In fact, NPS has chosen to cite the lowest year ensuing since the 1998 data used in the YVP for the numbers of commercial buses, 41 in 2004 (p. III-113). Average numbers of buses in 1998 per day during June, July, August and September were considerably higher than this and weekend numbers were even higher (weekend days typically, although not exclusively being when the highest daily impacts occur.) In fact, the impacts of commercial buses were not adequately mitigated when the Lower Yosemite Falls project occasioned moving commercial buses closer to humans staying at Camp 4, where many of them have remained."
(Individual, Fremont, CA, Comment #51-17)

Response: As a result of this public concern, changes to the Final Revised Merced River Plan/SEIS have been made in some resource topics of the Affected Environment (Chapter IV) to reflect that some current data may be lower than what the park has historically accommodated in prior peak years.

However, the information presented in the Affected Environment section is intended to present current and/or recent trends (versus historical peak information) and serve as a basis to effectively evaluate the significance of potential impacts. Typically the Affected Environment consists of identifying and determining pre-project environmental conditions.

Concern 452: The National Park Service should consider all of the environmental, safety and social impacts associated with a busing system and infrastructure required to accommodate it.

"As stated in a 1994 Alternative Transportation Feasibility Study: "potentially higher levels of particulate and nitrogen oxides (Nox) emissions would be generated by high volumes of bus travel on park roads;" "increased noise levels on park roads and in the Valley would be associated with high volumes of bus travel." Those facts are validated in the Yosemite Valley Plan. So many negatives--and still the vision of mandatory busing lives on. Since the concept of busing was originally proposed in the '70s, a host of environmental regulations have ensued targeting vehicle emissions. It makes no sense to replace cleaner cars with oversized dirty buses--buses that will only amplify the noise, the smell, and the glare, qualities that the 1980 GMP sought to reduce. With responsible traffic management solutions coupled with user capacity determination informing management zoning decisions--the entire issue of busing needs to be reexamined from an environmental perspective based on facts."
(Individual, Oakhurst, CA, Comment #55-48)

"Until Park administrators embrace an informed, diverse public as a value-added part of their team instead of as an adversarial entity to be circumvented, neutralized, even marginalized, then all Park plans will continue to be mired in controversy--all the while, Yosemite loses."
(Individual, Oakhurst, CA, Comment #55-49)

"There are also emergency concerns with respect to mass transit tourism from both an evacuation perspective as well as a single accident perspective. A bus going over an embankment can require life-or-death medical attention for 40 or more people all at one time. What, if any, medical facilities are available in the gateway communities or the Park to handle large numbers of people; are there airlift capabilities beyond 1 or 2 helicopters; how many ambulances are available; will emergency vehicles even be able to access an accident competing for space on 2-lane mountain roads."
(Individual, Oakhurst, CA, Comment #55-50)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not implement a busing system and so does not consider the effects thereof. If the implementation of a busing system is considered in the future, the project would have to be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public involvement.

Traffic Condition

Concern 290: The National Park Service should consider the increased traffic within the corridor associated with overflow from the Mariposa Grove of Big Trees.

"[O]ut-of-area cars are being parked there [at the Wawona Store]. Visitors to the Mariposa Grove of Big Trees have very limited parking at the park entrance to, or inside, the Grove. They are instructed to park at the Wawona Store and be shuttled to the Grove. The proposed preferred option moves vehicles from the area of the Mariposa Grove, which is outside the Merced River area, to parking facilities that are inside the river boundary established by the Wild and Scenic Rivers Act."
(City Agency, Mariposa, CA, Comment #138-2)

Response: The National Park Service has recognized that traffic congestion has implications to the overall visitor experience, can contribute to the degradation of some of the river's Outstandingly Remarkable Values, and can also affect vehicle and pedestrian safety. As part of the park's VERP program, an indicator of "Occupied Parking versus Capacity" has been developed that has a direct relation to the number of vehicles on roads, in that if vehicle parking can be accommodated, then roadway and intersection congestion will be minimized, especially during peak visitation periods. If monitoring the number of vehicles in any activity area at any one time indicates that existing parking capacity is being exceeded, park managers will implement appropriate management actions (see list of potential management actions in Chapter II) to ensure that congestion on roads is minimized and related Outstandingly Remarkable Values in affected areas are being protected and enhanced.

Concern 291: The National Park Service should consider the impacts on traffic associated with shuttling visitors to and from the Wawona SDA camp during construction.

"[I]t is anticipated that, at least during the construction phase, the SDA Camp will be shuttling visitors that will park at the Store. The result is artificially limited parking and premature saturation of the lot. This will cause more frequent implementation of Management Action than would occur if the lot were used for local traffic only,. The congestion already impedes ingress and egress by residents, particularly on Forest Drive. (ref. –Pg. D4, ff and Table D2 of Revised Plan)"
(City Agency, Mariposa, CA, Comment #138-3)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, this public concern is not within the scope of this document.

Should the Seventh Day Adventist camp propose construction activities that occur on their own private property the National Park Service would work cooperatively with Mariposa County, Wawona residents, and the Seventh Day Adventist to identify specific mitigation measures and traffic management actions to minimize impacts to park visitors and local residents..

Traffic Management Operations

Concern 195: The National Park Service should provide more private vehicle parking and better traffic management for the area.

"Parking for cars is inadequate as a percentage of total transported visitors per parking space type." (Business, Groveland, CA, Comment #86-3)

"Private Vehicles — due to the corridor' whitewater river rafting and camping focus, most travelers through our corridor are in cars and looking for overnight camping and day use parking for hikes and site visits. Additionally, during the high season, a majority of travelers are driving cars and campers/RVs touring the western USA in a fashion not supported by bus-based systems. More private vehicle parking and traffic management accommodations are needed."
(Business, Groveland, CA, Comment #86-4)

Response: The National Park Service has recognized that traffic congestion has implications to the overall visitor experience, can contribute to the degradation of some of the river's Outstandingly Remarkable Values, and can also affect vehicle and pedestrian safety. As part of the park's VERP program, an indicator of "Occupied Parking versus Capacity" has been developed that has a direct relation to the number of vehicles on roads.. If monitoring the number of vehicles in any activity area at any one time indicates that existing parking capacity is being exceeded, park managers will implement appropriate management actions (see list of potential management actions in Chapter II) to ensure that congestion on roads is minimized and related Outstandingly Remarkable Values in affected areas are being protected and enhanced.

Concern 33: The National Park Service should re-establish a railway and extend it into the Valley to relieve traffic congestion.

"Suggest provision for a reestablished railway right-of-way through to El Portal and into the Valley to relieve automobile traffic and provide day visitor convenience from merced rail and air terminals plus auto parking outside of the park. This rail should be based upon a modern mountain type railroad similar to that of the MOB between Montreux and Gstaad Switzerland."
(Individual, Comment #20-1)

"We are expressing this opinion and providing this information in the hope that you and other leaders within the Park Service Planning group take serious consideration of a future rail system in your scooping process. The added benefit of this rail system would enhance the transportation structure for the New UC Merced Campus. As the map would indicate it would be a direct connection to the Campus on La Paloma Rd. to the Amtrak system and the proposed High Speed Rail ,to include future Airport facilities at the Former Castle Air Base."
(Business, Merced, CA, Comment # 92-2)

"And, the best alternative we have to the automobile for the next 20 plus years is a regional public bus system? While we support a regional bus system proposal as part of the solution, by itself, it is a bland, status quo response that lacks imagination and fails to add the journey as part of the Yosemite adventure. Now that the National Park Service will recommence a revised plan for the valley and region, we think it's important the rail alternative be recognized in the NPS plan. We are not suggesting they study the alternative in exhausting detail at this time, but we do believe that the option needs to be recognized because decisions will be made over the next several years that may preclude forever the ability to develop such an alternative."
(Business, Merced, CA, Comment #92-3)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, construction of a railway to relieve traffic congestion was not considered during this planning process. If a railway system were to be considered as a potential park project, it would have to be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public involvement.

Concern 35: The National Park Service should implement a parking lot at Taft Toe and bus day users throughout the rest of the Valley.

"The Yosemite Valley Plan calls for Out of Valley Parking, along the three entrance routes, in order to reduce congestion in the valley. This concept failed miserably at Bryce Canyon. Since many visitors enter the valley through one route and exit through another route, without ample prior orientation, it would seem pragmatic to utilize the unique situation now in place. No matter which entrance is used, or which exit is used, all vehicles must now circuit the "round-about" of one-way traffic via Pohono Bridge, Bridal Veil Meadow, El Capitan Bridge, etc.

The one place that all visitors have in common to pass, is the area at Taft Toe, where one of the alternative plans proposed for the Yosemite Valley Plan, suggested a parking lot. If this were constructed, instead of the three "Out of Valley Parking Lots", it could be used by all. A mutual Visitor Orientation Center utilized adjacent, to show films and answer visitor's questions, could help visitors understand the various options, before they might board a valley shuttle bus, at that point. Many visitors, on a tight time schedule, might opt to think that they had already seen the Valley View, Bridal Veil Falls, Ribbon Falls, El Capitan, Cathedral Rocks, the Visitor Orientation Center, and exit the valley at that point, without congesting the East Valley. For those visitors wishing further investigation of the valley's wonders, the West Valley Shuttle Bus System could carry them on to the Interpretive Visitor Center, and connect to the East Valley Shuttle Bus System.

Those with lodging or camping reservations could proceed in their own vehicles. Off season times might allow the choice of proceeding to the Camp Six Parking Area, in their own vehicles, or allowing "first come first serve" use of that parking area as an option, before restricting private vehicle passage into the East Valley."
(Individual, Marble Quarry, CA, Comment #23-3)

Response: The parking area at Taft Toe was considered in an alternative in the Yosemite Valley Plan. However, the Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, a parking and busing system was not considered during this planning process. If the implementation of a busing system and the placement of parking areas were to be considered in the future, it would have to be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public involvement.

Concern 223: The National Park Service should limit private vehicles and provide clean public transportation.

"Why not put that money into clean public transportation and limit vehicular traffic to through traffic and RV's only?"
(Individual, Sonora, CA, Comment #90-2)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts that does not dictate any specific action. It is a working manual for guiding decisions relating to land use and activities in the river corridor. More specifically, the Revised Merced River Plan was directed by the court to address the El Portal boundary and a user capacity program. As such, the specific details of potential actions which would limit private vehicles would undergo the appropriate environmental review under the National Environmental Protection Act, including public involvement.

Concern 224: The National Park Service should explore a full range of regional and local Valley transportation alternatives.

"In prior correspondence to NPS, we took issue with the quality of transportation elements in both the Housing and Valley Implementation Plans. Specifically, we found that none of the plans adequately dealt with the full range of regional transportation alternatives available, and, perhaps more importantly, failed to preserve the ability to provide other transportation alternatives at a future date."
(Business, Merced, CA, Comment # 92-1)

"In the future, the Valley should start looking at a different transportation system than what they have composed. I wrote a comment on the transportation system previously, particularly the buses."
(Individual, Citrus Heights, CA, Comment #95-4)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, transportation alternatives were not considered during this planning process. The National Park Service currently has a traffic management plan in place. The development of a transportation management plan that explores a wide range of transportation alternatives could be included in future planning processes. Any proposed transportation options or traffic management plan would have to be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public involvement.

Concern 225: The Revised Merced River Plan should improve the transportation analysis in the document to provide a level of detail that describes the transportation elements of the plan.

"However, with specific reference to the transportation elements of the plan, we cannot support any of the alternatives proposed. The level of detail necessary to fully understand the transportation elements of the plan, the plan's failure to reflect the diversity available in transportation services, lack of a long-range perspective, and failure to relate to other Park transportation needs, sets the tone for our recommendation that the National Park Service planners expand the range of alternatives as it relates to transportation."
(Business, Merced, CA, Comment #92-4)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Although the VERP program will monitor parking and related impacts, the Revised Merced River Plan/SEIS does not contain a transportation element.

Concern 434: The National Park Service should develop a traffic management plan.

"[C]urrently the park service lacks any national plan or system to manage traffic"
(Individual, Oakhurst, CA, Comment #101-4)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, transportation alternatives were not considered during this planning process. The National Park Service currently has a traffic management plan in place. The development of a transportation management plan that explores a wide range of transportation alternatives could be included in future planning processes. Any proposed transportation options or traffic management plan would have to be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public involvement.

Concern 453: The National Park Service should clarify what the long-term options for transportation are.

"The Revised River Plan also proposes to increase the number of tour buses including buses with commercial permits (e.g., YARTS) from the Valley Plan peak estimate of 6O to 92 per day on an interim basis. Long- term options for transportation are vague: "In the long-term, park management could implement management measures that would change visitation patterns and transportation conditions in the Valley." There is no discussion as to what those changes might be other than generating fear that there is the possibility of increased implementation of restricted access."
(Individual, Oakhurst, CA, Comment #55-52)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, transportation alternatives were not considered during this planning process. The National Park Service currently has a traffic management plan in place. The development of a transportation management plan that explores a wide range of transportation alternatives could be included in future planning processes. Any proposed transportation options or traffic management plan would have to be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public involvement.

Roads, Trails, and Bridges

Concern 92: The National Park Service should remove the road from the El Capitan meadow and turn it into a bike and pedestrian zone.

"Also, when road changes come up please include the removal of northside drive from El Capitan Meadow and turning this area also into a bike and pedestrian zone. Fix the road-now-turned-bikepath to allow drainage from the black oak woodland to the meadow, strengthening both."
(Individual, Oakdale, CA, Comment #59-2)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects, such as removing roads. It is a working manual for guiding decisions relating to land use and activities. As such, specific road alignments were not addressed during this planning process. If the National

Park Service considered the removal of Northside Drive in the future, it would have to undergo the appropriate environmental review with public involvement as required under the National Environmental Policy Act.

Parking

Concern 146: The Revised Merced River Plan should consider a range of existing parking capacities that feed into the Merced River corridor.

"Why not consider a range in the existing parking capacity that directly feeds into portions of the Wild and Scenic River?"
(Individual, Fort Collins, CO, Comment #73-22)

Response: The existing parking facilities presented in the Revised Merced River Plan/SEIS depict the current level of parking facilities within the Merced River corridor. The VERP program has the ability to affect land use planning by providing information on resources and visitor experience and can improve the understanding of how various land use decisions affect visitor use levels and behaviors. The VERP program will in the future provide much needed information related to visitor patterns and levels to support land use planning. Although VERP does not drive land use planning in general, many of the management actions that could be implemented as a part of the VERP program can affect land uses, especially those related to infrastructure for visitor services such as parking facilities. Thus, the VERP program may drive land use changes because if monitoring indicates a need to make adjustments to infrastructure or services to better meet desired conditions (e.g., resize parking areas).The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 200: The National Park Service should adopt a legitimate number of parking spaces that are consistent with the *General Management Plan* for "interim limits."

"To protect Merced Wild and Scenic River Outstandingly Remarkable Values, the National Park Service should adjust those General Management Plan numbers downward to conform with existing overnight facilities and legitimate, paved parking spaces - these numbers would constitute the interim limits."
(Individual, Fresno, CA, Comment #82-31)

Response: The Yosemite National Park *General Management Plan* was adopted in 1980. In that era, visitor carrying capacity for national park plans was based on the capacity of facilities and infrastructure. Changes to existing facilities and infrastructure were recommended to fulfill and support management objectives. In this method, facility capacity defined the visitor carrying capacity.

In the Yosemite 1980 *General Management Plan*, the total visitor capacity "goals" it established were well below the actual level of facilities. That is, the existing facility capacities were greater than the capacities deemed optimum by the plan. Thus the *General Management Plan* called, not only for a reduction in facility capacity, but relocation of many existing facilities out of Yosemite Valley. These goals to remove and relocate facilities have guided all park planning efforts subsequent to the *General Management Plan*, including this plan. (For a comparison of facility capacities, see tables III-5 and III-6).

In the 1990s, national scientific and scholarly research, and National Park Service policy discussions, resulted in the adoption a new methodology for determining visitor carrying capacity. This methodology—the VERP framework—is described in the 2001 National Park Service Management Polices and in new Park Planning Program Standards signed in August 2004.

While the land use management zones and general management direction of the 1980 *General Management Plan* still largely meet the 2004 Park Planning Program Standards, the 1980 approach to visitor carrying capacities does not. In order to meet the new policy standards, Yosemite National Park will amend that element of the *General Management Plan* by translating the former carrying capacity approach to the more responsive VERP process through each new planning effort undertaken. The visitor carrying capacity approach proposed herein for the Revised Merced River Plan/SEIS would therefore amend the subject corridor portion of the *General Management Plan* with regard to carrying capacity.

In the future, overall visitation could increase or decrease under Alternative 2 as compared with *General Management Plan* levels. The overall level of park visitation, including the types and levels of use, would be informed by the results of monitoring as a component of the VERP program, which is designed to ensure visitor levels do not degrade Outstandingly Remarkable Values.

Concern 237: The National Park Service should eliminate bus parking in the Valley and create parking at Badger Pass and El Portal.

"I think there should be no bus parking. Buses should drop off there load of visitors and then be sent to Badger or El portal to wait a few hours before returning."
(Individual, Fresno, CA, Comment #78-1)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects, such as eliminating bus parking or creating new parking areas. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not specifically address bus parking and so does not consider the effects thereof. If the creation of new bus parking areas is considered in the future, the project would undergo the appropriate environmental review with public involvement have to be as required under the National Environmental Policy Act.

Concern 289: The Revised Merced River Plan has misrepresented the number of usable parking spaces at the Wawona store.

"Parking Capacity at Wawona Store. This is misrepresented in the Management Plan. There are not as many useable parking places as sited."
(City Agency, Mariposa, CA, Comment #138-1)

Response: For counts of parking spaces in formal, paved parking lots, the number of parking spaces were counted based on the striped delineation of parking spaces. Some parking lots in the Yosemite Valley (such as Curry Orchard and Camp 6) do not have striped delineation of the spaces. For lots without striping, parking capacity was determined by counting the number of parked vehicles and estimating a vehicle capacity for unoccupied areas. Physical evidence such as tire tracks and typical space requirements were used to determine the number of vehicles that would be able to fit in the lot.

For counts of parking spaces along the roadsides, the number of parked cars was counted as an indicator of the number of spaces available. For some locations, no vehicles were parked along the roadside during the inventory, but the condition along the roadside edge or shoulder showed that vehicles often parked in specific areas. For those locations that showed signs of previous parking activity, an estimate was made of the number of vehicles that could reasonably park along the roadside edge.

The information from the field inventory was supplemented with data from park staff about attended parking operations. During peak activity days in Yosemite Valley, traffic operations staff direct day visitors to park as efficiently as possible in the Camp 6 parking lot and at selected roadside areas around Camp 6. The column labeled as "Day-Visitor Attended Parking" shows a maximum parking capacity that is used only during peak visitor demand days.

Concern 295: The National Park Service should maintain critical day-visitor parking to deal with the increased traffic congestion during peak visitation.

"Day-use parking slots are critical given that a lack of them diminishes public access and will compound traffic problems, particularly during peak visitation periods."
(Federal Agency, Washington, DC, Comment #136-2)

Response: Yosemite's VERP program will be monitoring for the level of congestion on park roads in the 2005 field season. The Revised Merced River Plan/SEIS proposes an interim limit of 2,197 day-visitor parking spaces in Yosemite Valley. The interim limits would not be eliminated at the end of 5 years, unless park managers were confident that the VERP program was providing sound guidance on appropriate types and levels of visitor use and adequate protection of the Outstandingly Remarkable Values within the river corridor. If changes proposed at this time would result in substantially different environmental consequences than were identified in this document, an appropriate level of National Environmental Policy Act compliance would be completed. The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not specifically address the maintenance or removal of parking areas and so does not consider the effects thereof.

Concern 305: The National Park Service should substantially decrease roadside parking adjacent to the Merced River in El Portal to increase riparian vegetation, which in turn improve air quality and provide natural flood control.

"A vegetation buffer in the floodplain is already extremely inadequate due to "road presence." However, this is further exacerbated by the lack of natural riparian vegetation as a result of roadside parking and its associated (1) dissemination of vegetation and (2) soil compaction (which further exacerbates the inability of vegetation to regrow)."
(Individual, El Portal, CA, Comment #114-1)

"Removing vegetation from riparian areas impairs their ability to provide: (1) flood control, and (2) protect water quality, in several ways. Protection from road runoff (e.g. oil from automobile traffic) and natural flood control is substantially reduced by removing the natural barriers of live vegetation and roots from soil in the riparian zone. Removing riparian vegetation results in an increase in soil compaction and reduction in soil porosity-parking on top of this soil makes it worse. All of these impacts combine to cause a significant decrease in infiltration and a subsequent increase in the speed and amount of flood runoff. Lastly, sedimentation resulting from the removal of vegetative cover from riparian areas reduces flood storage, as eroded sediments settle out of the current and fill channels and deeper spots on the river so they can no longer convey or hold as much water."
(Individual, El Portal, CA, Comment #114-2)

"I recommend that roadside parking be significantly decreased, from current levels identified in the parking inventory (report by Dale Evans and Associates 2004), along those roadsides adjacent to the Merced River in the El Portal area."
(Individual, El Portal, CA, Comment #114-3)

Response: Yosemite's VERP program will be monitoring for the level of congestion on park roads in the 2005 field season. The Revised Merced River Plan/SEIS proposes an interim limit of 2,197 day-visitor parking spaces in Yosemite Valley. The interim limits would not be eliminated at the end of 5 years, unless park managers were confident that the VERP program was providing sound guidance on appropriate types and levels of visitor use and adequate protection of the Outstandingly Remarkable Values within the river corridor. If changes proposed at this time, such as the removal of roadside parking, would result in substantially different environmental consequences than were identified in this document, an appropriate level of National Environmental Policy Act compliance would be completed. The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not specifically address the maintenance or removal of parking areas and so does not consider the effects thereof.

In-Park Transportation Services and Facilities

Concern 234: The National Park Service should implement a traffic management plan similar to that of Zion National Park because current traffic congestion degrades the visitor experience and resources.

"Traffic congestion has long been one of the main complaints of Yosemite visitors. Long lines of cars cruising around the borders of the river cannot help but degrade the visitor experience and in turn harm the resource. At times roads even intrude into the scenic river corridor itself. Planners should look at the Zion N.P. Traffic Plan for a model of auto visitation. In Yosemite, those visitors that have reservations for a campsite or lodging could have been issued at the gate a color-coded windshield pass that directs one to a designated parking location. The visitor's car would then stay in that space for the duration of their stay. The free shuttle service would be used for visiting the various Valley locations. This Plan would need to be supported by expanding the shuttle service to include West Valley destinations not presently served. This would greatly reduce the traffic flow that visitors presently have to endure."
(Conservation Organization, Oakland, CA, Comment #75-9)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, transportation alternatives were not considered during this planning process. The National Park Service currently has a traffic management plan in place. The development of a transportation management plan that explores a wide range of transportation alternatives could be included in future planning processes. Any proposed transportation options or traffic management plan would have to be compliant with the National Environmental Policy Act and would undergo the appropriate environmental review with public involvement.

Socio-economic Environment

Concern 194: The National Park Service should fairly consider the commercial interests of all gateway communities and the effects to the bus-to-car ratios.

"Personal Vehicles and Campgrounds — our opinion is that the plan unfairly, and inappropriately favors Valley commercial interests and other gateway corridors. The NPS sites demographics and economics by county, knowing full well that our south Tuolumne County State Highway 120 corridor is a separate arid significantly different micro commerce from that of the county as a whole."
(Business, Groveland, CA, Comment #86-1)

"Bus Traffic - the bus-to-car parking ratio favors other corridors. Our corridor cannot accommodate much if any bus traffic - pass through or overnight. In fact, the larger buses cannot legally travel up our Priest grade and therefore through town."
(Business, Groveland, CA, Comment #86-2)

Response: Yosemite National Park managers are committed to working with gateway, community, and park partners to realize the full potential of improved services to regional and area visitors and the economic vitality of the communities. While the scope of this Revised Merced River Plan/SEIS address the deficiencies in the original Merced River Plan/FEIS, park mangers are actively participating in innovative approaches and forums to realize visitor satisfaction and gateway community goals.

Concern 151: The Revised Merced River Plan should clearly compare projected economic dollars in the region between alternatives.

"I also believe the SEIS needs to clearly compare the projected economic dollars to the region for each alternative. Perhaps a simple matrix displaying the projected expenditures of visitor dollars for each alternative would provide the transparency and clarity needed for due consideration."
(Individual, Fort Collins, CO, Comment #73-30)

Response: The Revised Merced River Plan is a programmatic document and provides broad policy guidance for future management of the Merced River corridor. The effects of this guidance on visitor levels and visitor spending is very difficult to predict or evaluate. Visitation will not necessarily grow continuously, as illustrated in the mid-1990s when visitation peaked at over 4 million, then dropped to than 3.2 million in 2004. Therefore, the economic analysis contained in the Final Revised Merced River Plan/SEIS consists of a qualitative evaluation of how the economic effects of each proposed action alternative would differ from the effects of continuing current management practices. The future level of visitation would be greatly influenced by the

VERP program, but it is impossible to estimate what future visitation levels will be under VERP. It is likely, however, that implementation of VERP could reduce visitor levels in the future (compared to continuation of existing management policies), since traffic and crowding are reflected in various VERP indicators. In the alternatives that include specific daily or annual visitor limits or caps, it is assumed that these caps could limit future growth in visitor levels as compared to having no limits.

Concern 416: The Revised Merced River Plan should examine current socioeconomic and community amenities data to determine whether or not park projections for the local economy are in fact, accurate.

"I would like to address what I consider to be out-of-date data included in the socioeconomic analysis contained within the recent MRP SEIS. I understand that the most recent figures regarding the socio-economic outlook for Mariposa County was obtained by Dornbush and Company in 1999. Having been a local' resident for some time, I feel certain that local economic conditions and demographics have changed in Mariposa County considerably since that time. I recommend that current data be examined to determine whether or not park projections for the local economy are, in fact, accurate."
(Individual, Yosemite, CA, Comment #126-6)

"Page III-128, final paragraph: "Yosemite Valley has the highest concentration of amenities in the park." While this may be a true statement, I would offer that Yosemite Valley has many visitor amenities, but very few amenities for the community of park employees and their dependents. This is an important point because I have come to believe that many people who have not lived in this community think otherwise. A careful assessment of what does exist for employee residents would reveal that there is little left of what was once a vibrant community. The sustained erosion of community life in Yosemite Valley has largely been dismissed by those who have not been directly affected. Those who have been affected have been significantly negatively affected. In my opinion, some steps must be done to address this situation because I am doubtful that the park will be successful in recruiting a new generation of employees willing to accept the burden of required occupancy in a bleak community."
(Individual, Yosemite, CA, Comment #126-14)

Response: The socioeconomic analysis in the Final Revised Merced River Plan/SEIS was based on the best available information from state, local and National Park Service sources. Because the Revised Merced River Plan is a programmatic document, the analysis of these effects is based on a qualitative analysis rather than quantitative analysis or modeling.

Concern 196: The National Park Service should adequately address user capacity management and visitor experience from a gateway commerce point of view.

"Visitor Experience/Capacity Management — issues of capacity management are only addressed in the theoretical sense -- long-term measures of Outstandingly Remarkable Values for the recommended Alternative 2. Statements like "Day visitor use of the Valley would be limited by managing to existing parking levels in the cast and west Valley. . ." and "The adoption of the interim parking limit for Yosemite Valley would likely result in the need to implement restricted a0ccs3 policies several times each year. . . "and . . .park management may temporarily restrict vehicles from entering Yosemite Valley when traffic congestion reaches predetermined levels." etc. fail to address the capacity management issues. These statements in fact amplify our concerns for having a comprehensive capacity management plan. Without specific guidelines and procedures the visitor experience is sure to be negatively impacted, aid so is the gateway economy. F Valley restrictions are imposed will travel over Tioga Pass as well as to and from Tuolumne Meadows be possible? How about coordination and communications between the Park and gateway community to ameliorate potential congestion? Or better yet, what action will the Park take to improve traffic flow and provide overload or buffer parking. Bottom Line, there is no plan in the plan that adequately address capacity management. And visitor experience from a gateway commerce point of view."
(Business, Groveland, CA, Comment #86-5)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. The National Park Service has taken into consideration gateway community perspectives with regard to user capacity, however has not based decisions upon a gateway commerce perspective.

Concern 346: The National Park Service should recognize the adverse impacts of interim facilities and a bus quota on the regional economy.

"As described, there would be implementation of interim facilities and bus quotas under this alternative resulting in "local, short-, and long-term, minor benefits to the regional economy," but the real affects of this alternative could be largely dependent upon what specific measures are implemented. Visitor populations could see moderate to major adverse affects, potentially for the long-term if restrictive management actions are taken."
(Business, Madera, CA, Comment #129-1)

Response: A description of the socioeconomic impacts associated with each of the action alternatives can be found in Chapter V environmental consequences of the Final Revised Merced River Plan/SEIS. The National Park Service is committed to working collaboratively with the bus industry and gateway communities regarding management actions that would affect either entity.

The environmental analysis does address the potential for adverse effects to the local economy based on the interim facility limits and bus limits. Under the preferred alternative (Alternative 2), park managers may use a number of techniques to manage to the facility and bus limits, some of which could have short-term benefits to local communities if visitors are temporarily redirected from Yosemite National Park into local communities. Other measures could have adverse effects, particularly if visitation is reduced over the long term. Therefore, the effects of this alternative on the regional economy could range from short-term benefits to long-term adverse effects as reflected in the document.

Concern 50: The National Park Service should be less development oriented.

"A far greater problem facing Yosemite National Park is illustrated by the list of development projects on pages F1 through F21. It is this type of development orientation of the NPS that will eventually destroy Yosemite and other national parks if it continues.

It should be obvious by any reasonable standards of intelligence that continuing development only sets the state for still further development at a later point in time, and eventually the area is changed beyond recognition. This is not compatible with the original purpose of the NATIONAL PARK SERVICE, to preserve unimpaired these resources for all time."
(Individual, Los Angeles, CA, Comment #15-2)

"You [the National Park Service] have contrived the River Plan to be the foundation for the destructive commercialization rampant in the Yosemite Valley. Knowing you have total control of the process, and a legal authority to sign any ROD you want, one may justifiably ask why invest time, energy, and financial resources to oppose the Park Service destructive commercialization in Yosemite."
(Individual, Oakhurst, CA, Comment #42-2)

"In order to truly "protect and enhance" the Merced River, scaling back on development in and out of the park should be the goal for both NATIONAL PARK SERVICE and the park concession. Though the population of Mariposa County, California, the nation, and the earth continues to grow, we all (this includes private land owners as well as National Park Service employees) must remember that Yosemite and its resources like the Merced River are precious and finite."
(Individual, El Portal, CA, Comment #48-4)

Response: The Revised Merced River Plan is a programmatic plan that, among other elements, prescribes management zoning within the Merced River corridor that determines the types of development that may occur in certain areas. It also establishes a User Capacity Management Program that determines levels of use in certain areas. The Revised Merced River Plan does not prescribe specific actions regarding placement or removal of facilities, infrastructure, and employees. Rather, the Merced River Plan, as amended, sets a framework for guiding future decisions within the river corridor.

As presented in Chapter I, the Revised Merced River Plan/SEIS amends the 1980 *General Management Plan*. In addition, Chapter III presents a discussion of the relationship of each alternative with the visitor capacity goals of the *General Management Plan*. Implementation plans, such as the *Concession Services Plan* and the *Yosemite Valley Plan*, further the goals of the *General Management Plan* to reduce development in the park. However, not all implementation projects have been completed to accomplish these goals.

Concern 387: The National Park Service should recognize that littering in Yosemite National Park is a major environmental issue.

"Garbage. I mean garbage, if you were a read some of things written about how long it takes a cigarette to break down. Shoes, and you know containers and cartons. We have a very serious environmental problem."
(Individual, Fresno, CA, Comment #97-3)

Response: The National Park Service agrees with this concern and is committed to providing trash and recycling receptacles in locations where there is a potential for littering, such as major destinations, scenic pull-outs, trailheads, campgrounds, picnic areas, and food concession facilities. In addition, the National Park Service provides informational materials to each visitor passing through an entrance station about park policies, such as prohibition of littering or feeding human food to wildlife.

Concern 439: The National Park Service should reevaluate the impacts of the sewage treatment plant on the river and river recreation.

"[T]he question I've got, or the comment is about the sewage system they put in El Portal that pollutes our river. If you're protecting river and everything, why is it ya'll keep dumping raw sewage into the river day after day? Time after time up there? I mean there's times we have to get out of the river because our eyes burn and sting too bad. You can't stand to be in the river. We're a long ways down stream. This is a question that I've got. You know, the park's supposed to be protecting and everything. This is supposed to be a wild and scenic river."
(Individual, Midpines, CA, Comment #104-1)

Response: Yosemite National Park mangers are very concerned about water quality and protection of the river. Yosemite National Park continues to conduct emergency, immediate, and intermediate repairs to Yosemite's utility infrastructure in order to comply with the California Regional Water Quality Control Board Cleanup and Abatement Order. This Order requires the park to address capacity and condition problems with the existing wastewater collection system in the Valley to resolve public health, safety, and environmental concerns related to recent utility failures. The Revised Merced River Plan/SEIS is a programmatic plan that does not dictate any specific actions, however water quality will continue to be monitored in numerous locations through the VERP program as a specific measurable indicator.

Concern 88: The National Park Service should consider rockfall zones when siting new campground facilities and in future park planning.

"If I'm not mistaken, this new plan and relocating camp sites is gonna push people closer to the granite walls where the biggest danger is rock slides. We were there at Happy Isles, and it was devastating. You're gonna get us closer to a rock slide experience than a river experience. And just doesn't make sense."
(Individual, Comment #45-3)

"It is not possible to avoid risks to human life or structures due to geologic processes such as earthquakes and rockfalls, or hydrologic processes such as floods and river course changes. Plan accordingly."
(Individual, Sanger, CA, Comment #46-2)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects, such as the siting of new campgrounds. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not specifically address potential sites for new campgrounds and so does not consider the effects thereof. Any future park projects relating to the location of new campgrounds or other visitor services would undergo the appropriate environmental review with public involvement have to be as required under the National Environmental Policy Act. This review would address safety concerns in the rockfall zones.

Concern 106: The National Park Service should consider funding shortfalls and the administrative and infrastructure costs associated with proposed use limits and Visitor Experience and Resource Protection implementation.

"Limiting use by segment and zone as suggested in alternatives III and IV and would likely be required under preferred alternative II as well, would be an administrative nightmare for the NPS requiring large but unknown numbers of enforcement personnel and infrastructure developments...the impacts of increased enforcement staff and infrastructure would have unacceptable impacts to already overused resources."
(Individual, El Dorado Hills, CA, Comment #27-5)

"Finally, in what I have been able to glean from Alternatives 3 and 4, they appear to be totally infeasible. I think it would be an administrative nightmare trying to implement either 3 or 4."
(Individual, San Francisco, CA, Comment #31-12)

"[I]t's important to recognize the Park Service, and right now in particular, is suffering from a significant fund shortfall. When it comes to operational dollars, resource management, we're looking at less than 50 percent of what the Park Service needs, what Yosemite needs to make sure they have the rangers out there monitoring to measure the health of these resources. And I think it's important to recognize that once we have a plan in place, we're going to need to take steps to ensure that adequate financial resources are there for the Park Service to, in fact, implement this plan. It's not an easy feat given the fact that they're already under-funded, and this would add to their important responsibilities. I would encourage the Park Service to look at ways they're going to address that shortfall and encourage the decision makers or citizens to talk to their decision makers to look for an increase so that the Park Service can do their job."
(Individual, Oakland, CA, Comment #38-5)

Response: Yosemite National Park is committed the fully implementing a User Capacity Management Program that includes the VERP process as a key component. As part of this commitment, a VERP coordinator position has been created and filled. Additionally, funding has been secured for the next 5 years (FY 2004 through FY 2008) to implement the VERP program. Park resource managers have developed a set of initial indicators and standards as part of its *User Capacity Management Program for the Merced Wild and Scenic River Corridor* (NPS 2004a). The first year of monitoring was completed in 2004. In April 2005, the first annual report documenting the results of the 2004 program was posted on the park's web site and a public meeting was held to share program results.

The National Park Service has determined that Alternatives 2, 3, and 4 as presented in this document are all feasible from a cost and implementation standpoint. However, each alternative has various constraints and complexities with regard to implementation, as documented in the environmental analyses (Chapter V), particularly with regard to the visitor experience and park operations.

Concern 272: The National Park Service should define "visitor experience" in order determine the appropriate level of necessary employees, infrastructure and construction, thereby limiting commercialization.

"Though employees and employee housing may initially seem out of place in any discussion of visitor capacity goals, such a discussion relates directly to the facility services. Defining the visitor experience is the first step in deciding what facilities are needed. There is a direct correlation between facilities and revenue generation; the concessioner claims to want to improve facilities (which of course facilitates higher prices and increased profits), but the question should be--does the Park even need those facilities? ...What is the base level of services to be provided in the Valley and what is the base level of employees required? Each employee needs housing, food, water, parking place, HR services and more, requiring an increased development footprint while adding to the capacity in the park."
(Individual, Oakhurst, CA, Comment #55-30)

"Visitor Experience is not defined in the D. R. MPR. (see WSRA violations) Yet the type of uses determine the base level of services needed. The visitor experience needs to be defined first and based on that, the base level of services needed (not wanted) can be decided; and from there decide number of employees."
(Conservation Organization, Yosemite, CA, Comment #111-51)

"The types and levels of visitor uses determine the base level and kinds of services needed. This is an integral part of determining user capacity. The visitor experience needs to be defined first and then the base level of services needed (not wanted) can be determined; from there decide number of employees needed as well. (Visitor Experience is not defined in the D. R. MPR. See NEPA violations)"
(Conservation Organization, Yosemite, CA, Comment #111-94)

Response: The National Park Service and Yosemite National Park are required by law to protect resources for future generations and provide for the enjoyment by visitors. This dual mission required difficult management decisions including identification of resources so fragile or impaired that they cannot withstand any visitor impacts, to identification of resources that are so spectacular and resilient that they present opportunities to change lives and touch heart. In the process of prescribing management zones in the Merced River Plan, previous visitor opportunity decisions were revisited. Decisions were made about types and levels of use, and the visitor services and infrastructure required to support them. These decisions made in the Merced River Plan furthered the goals of the *General Management Plan.*

Concern 389: The National Park Service should consider the long-term costs associated with not dealing with problems regarding resource protection in the immediate.

"Of course, cost also comes up. Well, it cost more not to do something in the long run. Such as with invasive plan. It cost a lot to manage that stuff, but If you don't do it, it's going to cost you more in the end."
(Individual, Fresno, CA, Comment #97-4)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 393: The National Park Service should consider more natural boardwalk building materials as they are less problematic in the winter.

"You might need more walkways, not fiberglass. The ones they put in Cook's Meadow is fiberglass. And I understand it's extremely slippery in winter. A real hazard to walk across. Also it's a very unnatural material. It doesn't belong in the park."
(Individual, Fresno, CA, Comment #97-4)

"Synthetic boardwalks such as the one in Cook's Meadow is unnatural and very slippery under certain weather conditions."
(Individual, Fresno, CA, Comment #128-8)

Response: This concern will be brought to the attention of appropriate park staff. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 394: The National Park Service should place more signs at entrance stations explaining that feeding park wildlife is prohibited.

"Feeding signs are extremely important to have before you enter the park. I have come across enormous resistance to this. I don't know why. What's the big deal about putting a sign at the entrance gate? When the previous superintendent was there before he left, you know those bear flyers that they had? You had a sign on both sides. They were put on windows and as you drove it was clear that you're not supposed to feed animals. I don't know why they took that down. It was working very visibly."
(Individual, Fresno, CA, Comment #97-9)

Response: The placement of additional signs is one of the many potential management actions that could be implemented if VERP standards are exceeded. However, at this time the Revised Merced River Plan/SEIS is not proposing specific actions. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 395: The National Park Service should increase fines in order to pay for the cost to collect them.

"How did we get to increase fines so that when you do make a fine, it doesn't cost more to collect it? And what do we do about getting the magistrate to do something about that?"
(Individual, Fresno, CA, Comment #97-10)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not specifically address fine collection and the effects thereof.

Concern 398: The Revised Merced River Plan should clarify when and by how much entrance fees could be increased.

"Alternative 2 also has its negative aspects. It raises park fees at the gate without explaining the policies that govern the details of this raise hike. Will the fees be raised depending on season or by segment? Will fee increases be linked to types or times of use?"
(Non-Governmental Organization, Mill Valley, CA, Comment #119-3)

Response: Fees assigned to National Park Service administered lands are set by Congress through the Fee Demo Program. As such, the plan does not specifically address park entrance fee collection. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, the above concern is not within the scope of this document.

Concern 405: The Revised Merced River Plan should designate El Portal as a Spray Free Zone to protect the river from pesticide residue.

"As a parent of a young child it has been recently brought to my attention that there is something occurring here in El Portal that could threaten the health of residents, degrade River values, and that seems to me to be in violation of the WSR Act. Apparently, for years, Mariposa County and the Mariposa Unified School District have been regularly spraying pesticides (a Roundup mixture containing glyphosate) around the pool, library, and school in Rancheria as an attempt to control invasive plants such as the yellow star thistle. I was told by a school district employee last week that pesticide use has been regular fire prevention protocol for the county and the school district in El Portal for years—though the school district never uses pesticides at the school in Yosemite Valley. Fortunately, a group of parents contacted the school principal today and we have offered to weed around the school in order to spare our children and the Merced River ecosystem the consequences of these potentially dangerous chemicals. I have also heard that Caltrans regularly uses pesticides at the edges of Highway 140 along the Wild and Scenic Merced River. It is my hope that including this timely community issue in my comments will not only inform the YNP of this threat to the Merced Wild and Scenic River corridor (as well as the threat to public health)."
(Individual, El Portal, CA, Comment #109-4)

"It was brought to my attention this week that the area surrounding the El Portal Elementary School was to be treated with herbicides such as Roundup. Fortunately, concerned parents and an adaptable principal are working to exchange the application for a group of parents willing to spend a day manually weeding the area. This incident, however, brought to my attention an important aspect of river protection. This may be in one of the MRP documents somewhere that I've missed, but if it isn't, I think that it should be addressed. If we are talking about protecting the river and then we allow the spraying of herbicides within the river corridor, I would think that residue could easily be brought down into the river (especially near the warehouse - I don't know if they spray there as well). If the health of the river is to be maintained, this practice should be looked into and I would advocate that the MRP mandate El Portal as a Spay Free Zone. I've heard of whole counties that are practicing this, it seems that if a whole county can do it, then doing this in the small town of El Portal could not be too difficult. I don't know if this issue can be addressed in the plan at this point, but I felt it should be pointed out anyway. It seems that pesticide residue in the river might have a wider effect on the health of the river than the amount of people on it's banks."
(Individual, El Portal, CA, Comment #120-10)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not specifically address the use of pesticides. However, the upcoming Parkwide Invasive Plant Management Plan will address the issue of herbicides. These comments will be forwarded to that planning team.

Concern 406: The National Park Service should protect El Portal's community of resources, wildlife and people for generations to come.

"[El Portal] is a special place for many reasons and deserves protection for that. The area has an incredible history and continues to be an incredibly unique place in our fast changing world. We have an obligation to protect and enhance it's community of resources, wildlife and people for generations to come."
(Individual, El Portal, CA, Comment #120-12)

Response: The National Park Service recognizes this concern and the importance of the El Portal community. The upcoming El Portal Concept Plan project will thoroughly review and evaluate the natural and cultural resources in the El Portal Administrative Site in accordance with the guidance for the river corridor for this river segment provided in the 2000 Merced River Plan and revised by this document.

Concern 426: The National Park Service should ban campfires in Yosemite Valley from May through October 15th each year to minimize air pollution.

"Though local and national experts agree that the air in the park hinders visibility of the scenic Outstandingly Remarkable Values of the Merced River corridor while negatively affecting the health of park visitors, human residents, trees, and quite likely wildlife and other plants, there is still no tangible air quality plan or strict emissions regulations in Yosemite National Park. Why is air quality monitored regularly in Jerseydale (NFS land) by NPS but not in El Portal? Yosemite is upwind of some major sources of California's bad air; however, the park is not thoroughly monitoring or actively working to minimize air pollution that originates from within the park via unnecessary campfires and excessive vehicle traffic as well as from out-of-date fire management policies. Given the dry hot Mediterranean climate of the region and the steep walls enclosing Yosemite Valley it is completely inappropriate to allow campfires during the warmest months of peak park visitation. Although there are currently campfire restrictions in Yosemite Valley, there really needs to be a complete ban on campfires there from May through October 15."
(Individual, El Portal, CA, Comment # 109-5)

Response: The National Park Service has current restrictions on campfires in Yosemite Valley. Because the Revised Merced River Plan is a programmatic plan that does not dictate any specific action or projects, changes in these restrictions are not addressed as part of this planning process. This does not preclude the consideration of more stringent restrictions in the future, it simply is not addressed at this time.

Concern 428: The National Park Service should remove the Merced Lake High Sierra Camp and associated stock and horse operations.

"The primary park concessioner (Delaware North Corp.) makes it no secret that honoring Yosemite as a national treasure to be preserved and protected is less important than viewing it as merely another of the corporation's "resort" destinations to be developed and marketed. The Merced High Sierra Camp has been identified as a major source of fecal contamination for the Merced River corridor—perhaps this concession operated facility dependant on horses and stock should be removed."
(Individual, El Portal, CA, Comment #109-7)

Response: The National Park Service will continue to monitor water quality through the VERP program, including locations upriver and downriver of the Merced Lake High Sierra Camp. Reducing stock use within the river corridor could be a potential management action if information gathered through VERP showed an exceedance of the water quality standard set for fecal coliform in those areas. As such, the plan does not call for specific actions, such as the reduction of stock use or removal of the Merced Lake High Sierra Camp. The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 429: The National Park Service should discontinue concessioner rafting operations in Yosemite Valley due to impacts associated with trampling river banks and diesel shuttling services.

"[T]he concessioner rafting (as opposed to families/individuals bringing their own raft) may need to be discontinued due to the high impact of multiple rafts entering the river at the same point, trampling vegetation on banks, and the impact of concession diesel trucks picking up the rafts in places that would otherwise be a quiet experience for many visitors."
(Individual, El Portal, CA, Comment #109-8)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 430: The National Park Service should close Foresta Road to vehicle traffic and only permit pedestrian and bicycle access between Old El Portal and Rancheria.

"The Foresta Road (the smaller road across the river from 140 that connects Old El Portal with Rancheria) seems like an obvious place to focus tangible restoration of the Merced River corridor; if this non-essential road could be closed to cars and open only to bikes and pedestrians it could enhance the Outstandingly Remarkable Values of every category used in the WSRA. It could initiate a resource restoration process benefiting River plant and animal communities as well as a huge community enhancement for local human residents. The two neighborhoods of El Portal (Old El Portal and Rancheria) would be more linked socially and children and adults could even safely ride their bikes or walk to the high school and elementary school, the library or the pool."
(Individual, El Portal, CA, Comment #109-13)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not specifically address use changes for Foresta Road. If the closure of Foresta Road to vehicle traffic is considered in the future, the project would undergo the appropriate environmental review with public involvement have to be as required under the National Environmental Policy Act.

Concern 279: The National Park Service should reevaluate whether the many categorical exclusions actually require an Environmental Assessment.

"And there have recently been more than 100 categorical exclusions which circumvent public review -- a number of the ones we have read, are not accurately reflecting the potential harm and are not accurately filled out. Many probably would actually require at least an EA be put out for public review for compliance."
(Conservation Organization, Yosemite, CA, Comment #111-93)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. Based on the above, this public concern is not within the scope of this document.

Concern 397: The National Park Service should not further develop El Portal.

"There are several issues that surround the Merced River, and the boundaries at El Portal. It's my understanding that the park service intends to leave that open for development or the question of development in the future. I don't think any development should be done."
(Individual, Fresno, CA, Comment #135-2)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 164: The National Park Service should develop a park stewardship program for concession and park service employees.

"Concession employees likely spend more person-hours in the river corridor than any other group, but receive little or no training in park stewardship. NPS and DNC have an excellent opportunity here to develop a park stewardship program for employees to help protect the Merced."
(Individual, Comment #81-11)

"Employees whether concession or not should see videos and take a written test regarding do's and don'ts for resource and wildlife protection."
(Individual, Fresno, CA, Comment #128-19)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not specifically address education programs for concession employees. This does not preclude the consideration of such a program in the future, it simply is not addressed at this time.

Concern 328: The National Park Service should replace asphalt in the meadows with boardwalks.

"Boardwalks are badly needed in place of asphalt in the meadows and the lower Yosemite Falls trail ways."
(Individual, Fresno, CA, Comment #128-7)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 343: The National Park Service should restore the trail between Church Bowl and Yosemite Falls.

"Please bring back my Lower Yosemite Falls trail! The trail from Church Bowl that lead "directly" to the Falls was connected!...Auditory, visual and tactile continuity existed!"
(Individual, Fresno, CA, Comment #128-26)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not specifically address the creation or restoration of trails. This does not preclude the consideration of the Church Bowl/Yosemite Falls trail restoration in the future, it simply is not addressed at this time.

Concern 344: The National Park Service should remove the asphalt bridge at Lower Yosemite Fall.

"The asphalting of the bridge is an offense and I believe was done to cut costs. The wooden bridge existed without asphalt covering for years and could have continued."
(Individual, Fresno, CA, Comment #128-27)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not specifically address asphalt in specific locations. This does not preclude the consideration of the Church Bowl/Yosemite Falls trail restoration in the future, it simply is not addressed at this time.

Concern 333: The National Park Service should better enforce park regulations.

"An enforcement ranger told me he has more important things to do than worry about protecting Half Dome from visitor destruction. This is only ONE example of several that tell me rangers need better training in attitude and priority to protect resources."
(Individual, Fresno, CA, Comment #128-22)

"Everything that's been mentioned here will have no value if it's not enforced, and I go to Yosemite a lot and I hear so many excuses from enforcement rangers, personnel and interpretive rangers, just making excuses to make visitors happy at the expense of wildlife. How it is there was so much mention here protecting resources such as social trails. Yet, when I see people crossing a meadow and going where they're not supposed to, and I see an enforcement ranger, I mention it to him. The response I get, "Well they're here to have a good time. I don't want to bother them." So, how's this going to be enforced? The problems you have there now are not being enforced. That too when I pointed out to enforcement ranger "Well you know there might be somebody being murdered across the valley, and I'm supposed to fine somebody because their son threw a milk carton down on the grounds?" The priorities are not there. The attitude is not there."
(Individual, Fresno, CA, Comment #97-1)

"I suggested in the peak period such as up in Glacier Point you have enforcement rangers, maybe 2 or 3 there, to do something about the animals being fed and bringing their dogs up there and letting them lose."
(Individual, Fresno, CA, Comment #97-6)

Response: The Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not address enforcement issues. The National Park Service is dedicated to enforcing area closures and resource protection issues to the greatest extent possible.

Concession Services

Concern 388: The National Park Service should recognize the revenues the Delaware North Corporation is aiming to gain from the reduction of low-cost facilities and the construction of more expensive lodging facilities, and the political influence they hold.

"There's certainly a temporal relationship with the advent Delaware North in the national park scene, and in the tenure of Interior Secretary Babbitt. And the company has successfully taken over parks such places as Yellowstone, Sequoia Kings Canyon, Grand Canyon, Kennedy Space Center and others. In the mid 1990's Delaware North was grossing $200 million a year, and aiming for a billion dollars a year in revenues from national parks. They had bids out on one hundred national park sites. So I suspect they have access to the levers of the power at the national level and can make their influence felt. When we examine the net result of the current plans for Yosemite, we find a 50 percent drop in low cost accommodations and reconstruction of more expensive lodging facilities. The addition of a few more camp sites will still leave the number much reduced from traditional levels. It appears that monetary return is a major force in changes occurring in Yosemite."
(Individual, Mariposa, CA, Comment # 99-4)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Employee Housing

Concern 411: The Revised Merced River Plan should maximize zoning in El Portal that accommodates an increase in employee housing.

"For nearly fifty years, the National Park Service has publicly stated an intention of relocating non-essential functions and certain employee housing to El Portal. As you know, the Service acquired the land now known as the El Portal Administrative Site for that purpose. Notable movement from Yosemite Valley to El Portal has taken place over the past two decades. However, nearly all substantive progress in moving non-essential services and employee housing to El Portal has been undertaken by the National Park Service. There has been no relocation of employee housing by the primary concession contractors during this period. With the exception of small cabin-without-bath units that have been constructed since 1997 to replace housing removed following the January 1997 flood, concessioner employee housing in Yosemite Valley has been "frozen in time" since the 1950's. The vast majority of concession employees reside in what would be considered substandard housing in any community in America. I would venture to guess that much of the existing housing (tent cabins) would not be permitted in any non-park federal jurisdiction, including elsewhere in Mariposa County. From my perspective, the long-term acceptance of this substandard housing has created some important social conditions:"
(Individual, Yosemite, CA, Comment #126-1)

"The significance of this prob1em to the current issues in the Merced River Plan SEIS ie1ate directly to the park's ability to provide a suitable location for the construction of quality concessioner employee housing in El Portal. I believe that the National Park Service must be permitted to exercise considerable latitude in the allocation of scarce land resources for this purpose."
(Individual, Yosemite, CA, Comment #126-4)

"Again, as it relates to the Merced River Plan SEIS, it is important that real solutions to the park housing dilemma be permitted within the Administrative Site in El Portal. From my perspective, the "bottom line" is that the opportunities for affordable housing for park employees in all income ranges will only get worse in the coming decade. I predict that if this happens, all park employers (not to mention many others in Mariposa County) will find it nearly impossible to recruit highly skilled workers who will make a personal commitment to live and work in the area."
(Individual, Yosemite, CA, Comment #126-13)

Response: The National Park Service recognizes this concern. The type of zoning that can accommodate employee housing is (3C) Park Operations and Administration. The preferred El Portal boundary alterative in the Final Revised Merced River Plan/SEIS prescribes 411 acres of (3C) zoning. However, this document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor. The El Portal Concept Plan will determine the placement and siting of facilities in El Portal, including Employee housing.

Concern 413: The National Park Service should require the primary park concessioner to provide quality out-of-park housing for concessioner employees.

"The primary concessioner has not been compelled to address out-of-park housing in a meaningful way. I have many observations about this, but feel that they would be inappropriate to include in a public comment letter. However, I am certain that very few large corporations in America operate with a work force comprised of employees who live in tents or "tough sheds" that have no running water I have witnessed the conditions in the concessioner employee housing—in large part; they are deplorable. I am convinced that the substandard employee housing is the primary factor that prevents the concession from hiring a quality workforce on a consistent basis to provide quality visitor services on a consistent basis. Substandard employee living conditions contribute significantly to marginal visitor services in many respects. The dilemma of suitable employee housing for concessioner employees manifests itself, in my opinion, in a vicious circle that includes dissatisfied employees guests who are disappointed with visitor services, questions by the public regarding park housing policies, and concerns expressed about the over-commercialization of Yosemite."
(Individual, Yosemite, CA, Comment #126-2)

"The poor living conditions of concessioner employees contributes to the operational costs of the park. I will limit my comments in this regard my offering the observation that the park could feasibly reallocate public safety services that are now required to address community-based social issues to assisting in the general public and improving visitor services if employee housing conditions were improved at least to the degree that might be found in a typical community (i.e. small individual apartments). It is true that the new housing complex planned for the Curry Village area will make a marked improvement to the residents in that location (217), however, the majority of concessioner employees will continue to live in high density dormitory, cabin-.without-bath or tent accommodations into the future."
(Individual, Yosemite, CA, Comment #126-3)

"I am certain that no park concessioner, operating under the terms of a relatively shorter concession contract now (or in the future), will make the substantial investment required in housing outside the park or administrative site. This is simple business—return on investment over time. I do not believe that the National Park Service will be able to legally compel a new concessioner to purchase assets of an existing concessioner that might be located on non-federal property. It will be imperative that the NPS have the ability in the future to structure a financially feasible concession contract that can incorporate the development of quality out-of-park housing
(Individual, Yosemite, CA, Comment #126-5)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 417: The National Park Service should address planning constraints associated with the lack of affordable housing in the local area.

"The high cost of local real estate is exacerbated by the costs associated with commuting long distances from "town" to park worksites. I. do not believe that the "pros" and "cons" of the out-of-park housing has been sufficiently treated in public documents to show an accurate and comprehensive view of this complex subject to the public who might not be intimately familiar with local or gateway communities. To summarize this point—much has changed in Mariposa, Oakhurst and Groveland in the past thirty years, and I do not believe that the planning documents developed by the National Park Service have fully treated this important topic."
(Individual, Yosemite, CA, Comment #126-8)

"I recommend hat an objective effort be undertaken by the National Park Service to gather further financial data and personal insights as to how park employees in all sectors have been affected by the changing local real estate market and the impacts of commuting from town to park worksites. It is notable, I believe, that over the past twenty years, many employees have grown to consider the El Portal Administrative Site as their "park" worksite and have only limited knowledge or understanding of the dynamics of living and/or working in Yosemite Valley, which remains the primary site of visitor facilities, services and activities. The gradual and insidious lessening of many park employees connection with or immediate understanding of visitor services has, in my opinion, been detrimental to the Park."
(Individual, Yosemite, CA, Comment #126-9)

"Another dynamic associated with the limited middle and lower income housing stock in the local communities relates to the number of mid-range homes now owned and occupied by current park employees. In some cases, these homes will "turn over" as employees retire and leave the area—often selling their homes to new county residents who can "best" any offer made by established, local middle class workers. This is a concern, but so is the prospect that other park workers will retire and stay in the area, effectively "locking up" desirable, middle-income housing when few new housing opportunities."
(Individual, Yosemite, CA, Comment #126-11)

Response: The Revised Merced River Plan is a programmatic plan that, among other elements, prescribes management zoning within the Merced River corridor that determines the types of development that may occur in certain areas, as well as a User Capacity Management Program that determines levels of use in certain areas. The Revised Merced River Plan does not prescribe specific actions regarding placement or removal of facilities, infrastructure and employees. Rather, the Merced River Plan, as amended, sets a framework for decision making within the river corridor.

The Revised Merced River Plan provides a range of alternatives for the El Portal Boundary in Chapter III. The management zone prescriptions within each of the proposed boundary alternatives set a framework for decision making. Follow-on plans— such as the El Portal Conceptual Design Plan—will determine the siting and location of certain types of facilities, including employee housing.

Concern 163: The National Park Service should reduce the number of National Park Service and concession employees living in the Valley.

"Reducing the number of park and concession employees living in Yosemite Valley would ease stress on the river environment. (A good first step would be to use the General Management Plan maximum of 1,790 for the river corridor.) While living in the Valley can be a life-changing experience, providing too much Valley housing is not consistent with protecting the river."
(Individual, Comment #81-10)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 36: The Revised Merced River Plan should indicate whether more park service housing will be implemented in the Valley.

"I am pleased that better employee housing for concessions will be built at Curry Village. Will more park service housing also be available in Yosemite Valley?"
(Individual, Mariposa, CA, Comment #11-3)

Response: The 2004 Court Order directing this revision of the Merced River Plan specifically requires the National Park Service to revise the plan to (1) address user capacity in the river corridor, and (2) reassess the river corridor boundary in the El Portal Segment based on the location of Outstandingly Remarkable Values. This Revised Merced River Plan/SEIS is intended to address the deficiencies in the original Merced River Plan/FEIS with respect to the above two issues. This document along with the original Merced River Plan, are programmatic plans that do not dictate any specific actions. Together, these plans will serve as a working manual for guiding decisions relating to land use and activities in the river corridor.

Concern 281: The National Park Service should reconsider plans to increase employee housing in El Portal.

"The YVP plan in El Portal for employees is for the number of DNC employees rising from the current 52 to 755 !!! NATIONAL PARK SERVICE from 158 to 222, and other employees from 45 to 60. That is, the current total of employees in El Portal is planned to rise from 255 to 1037. The major increase is in concession employees by 14 times!!! That says a lot about the NATIONAL PARK SERVICE commercialization plans for Yosemite as well as El Portal. Under the YVP the total amount of employees park wide would rise by 300 or 400."
(Conservation Organization, Yosemite, CA, Comment #111-102)

Response: The potential relocation of concession and National Park Service employees from Yosemite Valley to El Portal has been proposed in other planning efforts in order to reduce non-essential facilities in Yosemite Valley. The El Portal Administrative Area was designated by congress for the relocation of such facilities. However, the Revised Merced River Plan is a programmatic plan that will guide future planning efforts in the Merced River corridor and does not dictate any specific action or projects. It is a working manual for guiding decisions relating to land use and activities. As such, the plan does not specifically address projects relating to the relocation of housing to El Portal.

The El Portal boundary will guide future planning efforts by designating management zones where development (including employee housing) would be allowed to occur within the Wild and Scenic River boundary. Areas zoned 3C (park operations and administration) indicate areas that allow for development, but this does not necessarily mean all of those areas will actually be developed. More specifically, the plan does not outline specific development projects that will occur in El Portal. Decisions on potential development in El Portal will be evaluated in the El Portal Concept Plan. This plan will require an Environmental Impact Statement, which will include public involvement through the public scoping and comment period process.

Index

Index

Air Quality
  III-64
  IV-2, 54
  V-10, 63, 162, 262, 354
  B-1
  E-21

American Indian
  I-23
  II-31, 49
  III-6, 66
  IV-5, 66
  V-82, 374
  VI-3, 5, 6
  B-1
  E-9
  consultation
    V-14, 83, 183, 184, 186, 187, 281, 284, 285 373, 376
    VI-5

aquatic habitat
  I-14
  IV-31, 49, 51, 99
  V-32, 34, 35, 36, 47, 57, 130, 155, 160, 229, 254, 259, 323, 347, 352, 413
  B-1

Arch Rock
  ES-6
  III-9, 24
  IV-4, 78, 84, 110, 113, 114, 123, 137, 151
  V-118, 120
  D-9
  E-2

Archeological Resources
  III-65
  IV-2, 69, 70
  V-3, 13, 77, 177, 275, 367
  A-3

Big Oak Flat Road
  IV-4, 9, 62, 84, 113, 149
  V-106
  E-2, 21

boundary
  I-3, 5, 10, 24, 25
  III-1, 2, 7, 12, 15, 25, 29, 38, 41, 50, 56, 60, 75
  El Portal *See* El Portal: Environmental Consequences

Bridalveil Creek
  I-14
  IV-5, 15, 36
  V-131, 230, 324, 414
  E-5

Bridalveil Fall
  III-46
  IV-7, 104, 121, 123, 125, 126
  V-107, 210, 395
  E-4

bridge(s)
  II-25
  IV-14, 68, 108, 109, 149
  V-27, 36, 86, 119, 131, 189, 230, 287, 324, 378, 414
  E-8
  E-12
  Ahwahnee
    IV-78, 150
  Cascades Creek
    V-120
  Clark's
    IV-78, 150
  El Capitan
    IV-150
  Foresta Road
    IV-150
  Happy Isles
    IV-78
    V-26, 36, 67, 73
    E-18
    Highway 140
    IV-150
  Pohono
    IV-78, 150
  Sentinel
    IV-150
  South Fork (Merced)
    IV-149
    V-30, 51, 61, 68, 75, 80, 84, 106, 114, 123
    E-14
  Stoneman
    IV-78
    IV-150
  Sugar Pine
    IV-78
  Superintendent's
    IV-150
  Swinging
    IV-150
  Tenaya Creek
    IV-78
  Wawona Covered
    IV-111, 138, 150
    V-88, 92, 290, 381
  Yosemite Creek
    IV-78, 149

bus
  limits
    ES-4, 6, 11, 12
    III-17, 22
    III-59, 68
    V-199, 201, 202, 206, 214
  shuttle
    II-26, 49
    IV-104, 121
    V-17, 67, 74, 95
    E-10, 12, 16
  tour
    ES-5, 11, 15, 17
    II-15, 35, 38, 41
    III-9, 17, 21, 30, 32, 42, 59
    IV-119
    V-146, 149, 153, 159, 162, 168, 169, 176, 179, 184, 253, 255, 258, 260, 276, 281, 287, 304, 348, 353
    C-2, 4, 6
    E-10, 12
    E-12

California State Historic Preservation Officer
  IV-76, 77
  VI-4

Caltrans
  E-20

Camp 4
  IV-73, 77, 82, 85, 92, 93, 105, 127, 136, 150
  V-15
  C-2, 4, 6
  E-9, 10

Camp 6
  IV-115, 116, 123, 126, 127
  V-55
  E-10

campgrounds
  II-28
  III-21, 47
  IV-92, 97
  impacts
    V-15, 26, 28, 33, 40, 47, 50, 56, 58, 60, 73, 75, 99, 115, 119, 122, 145, 178, 183, 189, 194, 202, 210, 224, 245, 250, 299, 389
    VI-3
    E-5
  Housekeeping Camp
    IV-19, 93, 109, 127, 136, 150
    V-15, 26
    VIII-11
    C-2, 6
    E-1, 8
  Lower Pines
    II-50
    IV-82, 93,127, 136
    V-15, 55
  Lower River
    IV-38, 82, 150
  North Pines
    IV-93, 127, 136
    V-15
    E-19
  Upper Pines
    IV-65, 92, 127, 136

Cascades Diversion Dam
  I-5
  I-10
  I-13
  I-16
  III-10
  IV-16, 18, 20
  V-26, 30, 36, 51, 60, 67, 73, 80, 84, 89, 109, 122, 135, 234, 328, 418
  E-17

Cathedral Beach
  IV-84, 126
  V-46, 56

Church Bowl
  IV-84

classifications
  ES-11
  I-5, 9, 10, 11, 19, 24
  III-1, 4, 42, 44, 55
  IV-31, 36, 42, 45
  V-23, 45, 53, 63, 70, 127, 128, 129, 131, 132, 133, 134, 135, 226, 227, 228, 229, 230, 231, 232, 233, 234, 321, 322, 323, 324, 325, 326, 327, 328, 384, 390, 399, 410, 411, 412, 413, 414, 415, 416, 417, 418
  VIII-3, 12

climbing
  II-25, 26, 27, 28
  III-11
  IV-70, 78, 81, 82, 85, 90

concessioner stable
  IV-94
  V-119
  E-1

cultural landscape
  IV-57, 75, 101
  V-14, 87, 190, 192, 288, 290, 380, 381

Cultural Resources
  I-14
  V-3, 12
  VI-3
  B-1
  user capacity
    II-31, 43
  affected environment
    IV-66
  environmental consequences
    III-66
    V-77, 131, 177, 229, 275, 323, 367, 413
  ORVs
    V-77, 78, 79, 83, 88, 130, 179, 182, 187, 192, 193, 279, 280, 285, 291, 369, 370, 371, 375, 376, 381

Cumulative impacts
    Alternative 1
    V-2, 25, 30, 35, 42, 50, 59, 66, 73, 80, 84, 89, 94, 96, 99, 100, 102, 106, 108, 112, 113, 114, 115, 122
    Alternative 2
    V-138, 144, 148, 152, 156, 162, 168, 176, 182, 188, 193, 200, 201, 203, 204, 206, 209, 214, 216, 217, 218, 219, 223
    Alternative 3
    V-237, 242, 251, 256, 261, 267, 274, 279, 285, 291, 296, 297, 299, 301, 303, 308, 311, 312, 313, 317, 331
    Alternative 4
    V-336, 340, 344, 349, 353, 359, 366, 371, 377, 382, 385, 387, 389, 391, 393, 398, 400, 401, 402, 403, 407

Curry Village
  II-13, 50
  III-17

[illegible] 84, 86, 88, 91, 93
94, 95, [illegible]
[illegible] 127, 136, 137
150
[illegible]
[illegible]
[illegible]
114, 115, 116, 123, 219,
287, 313, 378, 403
C-2, 6
E-1, 11

earthquakes
[illegible]
[illegible] 25, 138, 237, 331

El Capitan moraine
IV-7, 15, 17, 19, 31, 128
V-109

El Portal
[illegible]
boundary
ES-9, 13, 14, 16, 18
I-10
[illegible]
[illegible]
ORVs
[illegible]
Alternative 1
[illegible]
Alternative 2
[illegible]
Alternative 3
[illegible]
Alternative 4
[illegible]
affected environment
IV-8, 13, 32, 39, 40, 50,
52, 57, 69, 71, 74, 78,
81, 91, 92, 110, 113,
127, 129, 135, 137,
147, 149, 152
environmental consequences
[illegible]
65, 72, 78, 82, 87, 93,
96, 98, 102, 105, 108,
111, 118, 120, 132,
[illegible] 147, 150, 154,
160, 165, 173, 180,
185, 190, 198, 201,
202, 205, 208, [illegible]
[illegible] 225, 231,
236, [illegible]
254, 259, 265, 271,
277, 283, 288, 294,
296, 298, 302, 306,
[illegible]
[illegible]
[illegible]
374, 380, 384, 386,
[illegible] 397, 399, 406,
[illegible]
[illegible]
VIII-8, 13
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] 50, 51, 56
[illegible]
[illegible]
[illegible]
[illegible] 84, 87, 110
[illegible]
[illegible]
[illegible]
[illegible]
IV-4, 108, 110
VI-4, 5
[illegible]
A-3
C-4
D-6
[illegible]

El Portal Road
[illegible]-5, 24, 33
IV-4, 11, 20, 39, 62, 68,
69, 78, 105, 110, 113,
114, 116, 123, 138,
149, 150, 151
V-23, 30, 31, 33, 34, 38,
44, 47, 52, 62, 67, 69,
74, 76, 80, 85, 90, 94,
95, 99, 106, 115, 120,
122, 123
[illegible]
[illegible]

employee housing
ES-12, 15
II-2, 29
III-10, 19, 20, 29, 31, 32, 36,
70, 72, 73
IV-3, 95, 110, 147, 148
V-26, 36, 38, 41, 42, 44, 51,
60, 79, 83, 88, 103, 105,
106, 111, 112, 113, 114,
116, 118, 120, 121, 122,
144, 151, 152, 153, 155,
157, 159, 161, 180, 181,
185, 187, 190, 192, 208,
212, 213, 214, 215, 216,
219, 222, 225, 246, 250,
252, 255, 257, 260, 279,
302, 307, 308, 309, 310,
313, 316, 317, 322, 339,
343, 371, 398, 399, 400,
403, 407
C-2, 4, 5, 6
E-1, 7, 11, 21

endangered species
III-63
IV-1, 53
V-53, 54, 55, 56, 57, 58, 59,
60, 61, 62, 157, 158, 159,
160, 161, 162, 256, 257,
258, 259, 260, 261, 349,
350, 351, 352, 353, 354
[illegible]

energy consumption
[illegible]
IV-147
[illegible]
V-116, 121, 122, 124, 220,
222, 223, 313, 317, 318,
404, 407, 408

entrance stations
[illegible]
[illegible]
[illegible]
116, 148
V-197, 211, 253, 258, 305,
306, 383, 396

environmental justice
IV-3

Environmentally Preferable Alternative
ES-20
[illegible]
[illegible]

fish
I-1, 13, 21
II-7
[illegible]2, 30, 42, 43, 44, 45, 48,
50, 83, 103
V-50, 60, 126
[illegible]
[illegible]

fishing
ES-4, 6, 8, 10, 13, 17, 19
I-15
I-16
I-19
II-7, 13, 15, 35, 38, 42, 43
III-8, 9, 11, 17, 30, 42, 59
IV-44, 48, 81, 83, 101, 103,
[illegible]
V-15, 50, 55, 92, 93, 105,
132, 135, 199, 231, 234,
245, 249, 255, 260, 325,
328, 347, 348, 352, 353,
370, 375, 380, 397, 415,
418
[illegible]
A-4, 5

flood, 1997
IV-19, 20, 82, 84, 94, 140,
150, 151
V-15, 112, 146, 149, 224
E-3, 5, 6, 11, 17, 18

floodplains
[illegible]
I-3
[illegible]
III-7, 10, 12, 61
IV-7, 12, 14, 16, 17, 18, 19,
20, 21, 22, 27, 30, 33, 36,
50, 51
V-6, 7, 8, 25, 27, 28, 29, 30,
31, 33, 34, 47, 52, 55, 57,
62, 72, 78, 82, 87, 93,
118, 126, 137, 139, 140,
141, 142, 143, 144, 146,
166, 174, 238, 239, 240,
241, 242, 243, 265, 271,
331, 332, 333, 334, 335,
336
[illegible]
VIII-10
E-9

food services
[illegible]-28
II-29
V-35, 41, 48, 58, 202
[illegible]
E-7

forests
ES-6, 13, 17, 19
II-15
III-9, 17, 30, 42
IV-5, 38, 83, 86, 87, 123,
150, 151
V-105, 384, 390
C-3
E-5

Gateway Communities
[illegible]

General Management Plan (GMP)
ES-2, 1, 2, 6, 7, 8, 10, 12, 16
I-2
I-3
I-4
[illegible]-6
[illegible]
I-8
I-9
I-19
I-20
I-22
I-23
II-13, 14
III-7, 8, 9, 12, 22, 23, 24, 25,
29, 32, 34, 36, 47, 49, 53,
54, 58
IV-58, 64, 78, 98, 125, 126
V-2, 23, 27, 79, 83, 111,
112, 113, 125, 126, 127,
128, 129, 214, 224, 226,
227, 228, 309, 318, 319,
320, 321, 322, 399, 400,
408, 410, 411, 412
[illegible]
VIII-6, 11, 14, 17
A-2
C-4, 5, 6, 7
E-8, 9, 16

geology
I-13
IV-1, 6, 90
V-3, 5, 23, 136, 235, 329
geologic hazards
I-22
[illegible]
IV-10
V-5, 6, 329

glaciation
I-14
IV-6, 10, 13, 15, 36, 44
V-23, 131, 230, 324, 414

Gorge
[illegible]
II-21
III-10, 20, 23, 24, 30, 32, 33
IV-8, 11, 15, 20, 32, 39, 40,
41, 50, 68, 71, 74, 78, 81,
110, 123, 127
V-29, 33, 40, 47, 56, 64, 71,
78, 82, 87, 96, 98, 102,
104, 107, 117, 120, 132,
142, 146, 150, 154, 159,
164, 173, 179, 184, 190,
197, 201, 202, 205, 207,
211, 221, 230, 240, 245,
249, 253, 258, 263, 270,
277, 282, 288, 293, 296,
298, 300, 302, 305, 315,
324, 334, 338, 342, 346,
351, 355, 362, 369, 374,
379, 384, 386, 388, 390,
392, 396, 405, 414
C-2, 4, 5, 6

groundwater
IV-11, 21, 22, 24, 25, 26, 27,
33, 107
V-141, 239, 333
E-8

Happy Isles
ES-6, 13, 17, 18, 19
II-12, 15
III-9, 17, 30, 42, 44
IV-10, 14, 15, 18, 20, 21, 30,
65, 74, 76, 78, 85, 86, 90,
92, 95, 121
V-26, 28, 30, 36, 37, 42, 43,
51, 60, 61, 67, 68, 73, 74,
75, 95, 97, 123
D-7
E-1, 11, 12, 18, 21

Historic Sites, Structures and Landscapes
IV-75
V-86, 188, 286, 377

housing
I-8
I-20
I-22
III-10, 21, 29, 35, 36, 70

IV-3, 69, 105, 110, 111, 127, 128, 137, 138, 139
V-20, 38, 44, 63, 65, 79, 82, 83, 110, 111, 112, 113, 116, 121, 150, 163, 166, 170, 174, 181, 187, 192, 214, 215, 216, 221, 224, 245, 249, 302, 309, 310, 347, 350, 352, 400
B-1, 4
C-2, 4, 6, 8
E-1, 11, 16

hydrology
hydrologic processes
I-13
III-12, 26, 38, 50, 61
IV-18, 26, 27, 33, 37, 44, 90, 100, 101, 102, 103, 104, 105
V-6, 7, 8, 27, 28, 29, 30, 31, 130, 132, 133, 139, 140, 141, 142, 143, 144, 229, 231, 238, 239, 240, 241, 242, 243, 325, 331, 332, 333, 334, 335, 336, 415
E-12

Hydrology

Floodplains and Water Quality
IV-1, 13
V-6, 27, 139, 238, 331

ice rink
IV-94
V-119
E-1

Impairment
I-21
V-2, 3, 27, 31, 38, 44, 53, 62, 70, 76, 81, 86, 90, 110, 139, 144, 148, 152, 157, 162, 169, 177, 182, 188, 193, 214, 237, 243, 247, 251, 256, 261, 268, 274, 280, 285, 291, 308, 331, 336, 340, 345, 349, 354, 359, 366, 372, 377, 382, 398, 407

Indian Creek
IV-5

Indian Cultural Center
IV-73
V-38, 44, 52, 62, 68, 75, 81, 85, 90, 97, 110, 115, 123
E-9

Indian Village of Ahwahnee
IV-85, 91, 148
E-9

interpretation
II-29
III-67
IV-73, 99
V-14, 15, 16, 67, 74, 91, 96, 97, 99, 117, 118, 119, 122, 123, 124, 194, 200, 201, 292, 296, 297, 382, 386, 387
E-9

Issues and Concerns
I-23, 24

Land Use
I-17
IV-3, 98, 109
V-3, 16, 101, 204, 300, 390

LeConte Memorial Lodge
IV-68, 76, 77, 91, 92, 106
V-86, 189, 287, 378

Legal History
I-3

lighting
IV-152
V-48, 53, 56, 57, 121, 155, 160, 254, 259, 347, 352
E-19

Limits of Acceptable Change
II-4
III-55
VIII-7, 17

lodging
ES-2, 4, 10, 14
II-6, 14, 16, 26, 27, 28, 29, 35, 38
III-11, 20, 21, 32, 33, 47, 71
IV-3, 20, 79, 84, 89, 90, 93, 94, 98, 105, 106, 122, 123, 128, 129, 134, 135, 136, 140, 143, 144, 145, 148, 150
V-15, 20, 26, 34, 35, 40, 41, 47, 48, 56, 57, 58, 73, 77, 79, 83, 88, 92, 94, 95, 98, 100, 105, 113, 114, 115, 119, 147, 202, 203, 224, 245, 250, 299, 388, 389, 401
VIII-3, 6, 7, 8, 10
B-1, 4
C-2, 3, 4, 5, 6, 7

Madera County
IV-56, 57, 129, 131, 133, 139, 143
V-10
VI-7

maintenance
III-5, 47, 75
IV-22, 36, 37, 63, 80, 108, 109, 110, 111, 126, 137, 147, 149
V-8, 29, 35, 37, 41, 43, 48, 51, 58, 61, 63, 65, 71, 73, 80, 100, 117, 118, 119, 120, 121, 122, 123, 124, 221, 316
VII-2
A-5
E-11, 14, 15

Management Zoning
ES-6, 13, 17, 19
I-16
II-16, 49
III-9, 17, 30, 42, 58
V-128, 227, 321, 411

Mariposa County
I-22
III-5
IV-25, 55, 56, 57, 60, 110, 111, 112, 129, 130, 131, 132, 133, 134, 138, 143, 149
V-10, 63, 65, 66, 68, 75, 103, 112
VI-2
VI-6
VI-7
VI-8
D-6, 11
E-13, 15

Mariposa Grove
I-21
II-12, 41
IV-67, 68, 85, 115, 116, 121, 122, 123, 124, 151
V-105, 119, 208
VIII-16
D-11

meadows
I-14
I-15
II-26, 30, 31, 37, 38, 39, 49, 50, 51
III-8
III-10
IV-14, 19, 26, 27, 29, 30, 31, 32, 33, 34, 36, 38, 40, 43, 44, 45, 47, 48, 49, 51, 67, 68, 70, 77, 86, 89, 97, 101, 102, 103, 104, 105, 125, 126, 128
V-8, 31, 33, 36, 37, 39, 43, 45, 46, 51, 54, 55, 61, 100, 107, 108, 131, 133, 144, 158, 178, 181, 189, 190, 192, 210, 213, 221, 230, 232, 252, 257, 304, 307, 324, 326, 345, 350, 395, 397, 414, 416
VIII-1
D-2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
E-3
Bridalveil
I-14
II-49
IV-6, 7, 10
V-131, 230, 324, 414
D-7
El Capitan
II-50
IV-7, 12, 19, 29, 31, 65, 121
Hodgdon
IV-114, 135, 151
C-2, 6
E-5
Sentinel
II-49, 50
IV-32
Stoneman
II-32, 50
IV-32, 68, 126
V-36, 51, 60

Merced County
IV-116, 128, 130, 131, 132, 133, 134
VI-7
VIII-17

Middle Road
ES-20
III-50
V-330, 357, 363, 370, 375

Mirror Lake
II-12
IV-10, 63, 74, 76, 84, 85, 86, 88, 121
D-7, 8

Mitigation measures
V-25

Mono County
IV-4, 117, 129, 130, 134, 135, 143
VI-7

National Historic Landmarks
IV-68, 76, 77
V-86, 189, 287, 378

Natural Resources
IV-1, 6, 58
V-3, 5, 23, 136, 235, 329
VI-8, 9

Nature Center at Happy Isles
IV-90, 91, 92, 148
V-117

Noise
II-26
III-65
IV-2, 3, 62, 63, 64, 65, 95, 102, 103
V-3, 11, 12, 47, 48, 52, 55, 56, 58, 70, 71, 72, 73, 74, 75, 76, 159, 169, 170, 171, 172, 173, 174, 175, 176, 177, 268, 269, 270, 271, 272, 273, 274, 360, 361, 362, 363, 364, 365, 366, 367
VIII-1
B-1, 4
E-3, 4, 7, 16, 20

Northside Drive
IV-62, 65, 113, 114, 115, 116, 121, 123
V-52, 62, 104, 207
E-9, 10, 14, 19

Oakhurst
I-23
IV-137, 139
VI-1, 7, 8, 9

Old El Portal
ES-20
III-50
IV-78, 79, 110, 138
V-34, 40, 48, 57, 87, 108, 120, 155, 160, 190, 191, 245, 254, 259, 288, 330, 339, 343, 347, 352, 357, 363, 370, 375, 380, 397

Orientation and Interpretation
I-22
II-29
III-67
IV-2, 73, 89, 90, 99, 106
V-14, 15, 16, 67, 74, 91, 96, 97, 99, 117, 118, 119, 122, 123, 124, 194, 200, 201, 292, 296, 297, 382, 386, 387
E-9

Outstandingly Remarkable Values
I-13, 14
III-10, 25, 37, 49
V-130, 229, 323, 413
VIII-10

Park Operations and Facilities
IV-3
IV-147
V-3, 21, 116, 219, 313, 403

parking
ES-4, 5, 12, 15, 17
II-6, 14, 26, 35, 38, 41, 49, 51
III-7, 19, 21, 30, 42, 45, 49, 67, 68
IV-102, 104, 105, 112, 115, 122, 147
V-18, 103, 163, 171, 206, 209, 264, 270, 392
[illegible]
C-2, 4, 6, 8
General Management Plan
V-128
El Portal
ES-12

    III-20, 21, 24, 33, 59
    IV-123
    V-34, 79, 82, 88, 93, 105, 147, 150, 155, 180, 185, 190, 198, 208, 224, 245, 249, 255, 260, 278, 302, 306, 347, 352, 370, 375, 380, 393, 397
    C-2, 4, 6
    E-1
  Gorge
    ES-12
    III-20, 21, 24, 33, 59
    IV-123
    V-78, 82, 87, 92, 104, 146, 150, 154, 159, 179, 185, 190, 197, 202, 207, 211, 224, 245, 249, 253, 258, 277, 282, 288, 293, 302, 305, 338, 342, 346, 351, 369, 374, 379, 392, 396
    C-2, 4, 6
  Valley
    ES-12
    II-13
    III-9, 17, 20, 21, 24, 33, 59
    IV-115, 121, 122
    V-26, 31, 36, 44, 51, 60, 62, 67, 73, 77, 92, 95, 96, 98, 99, 104, 117, 119, 124, 125, 141, 179, 184, 189, 203, 207, 211, 224, 229, 302, 314, 319, 350, 368, 373, 378, 789, 392, 395, 405
    C-2, 4, 6
    E-10, 11, 12
  Wawona
    ES-12
    II-13
    III-9, 17, 20, 21, 24, 34, 59
    IV-123
    V-35, 41, 48, 58, 79, 83, 88, 94, 96, 106, 119, 126, 156, 161, 181, 187, 192, 208, 213, 224, 279, 284, 290, 303, 307, 371, 376, 381, 393
    C-2, 4, 6

picnic areas
  II-39, 44, 45, 47
  IV-20, 84, 123
  V-28, 141, 164, 171, 185, 191, 212, 245, 249, 253, 254, 258, 259, 283, 289, 333, 338, 342, 346, 351, 397
  Sentinel Beach
    II-15
    IV-87, 93

plants. see vegetation
  II-29, 32, 43
  III-47
  IV-5, 12, 24, 25, 30, 33, 35, 52, 53, 57, 71, 95, 103, 111, 147
  V-8, 53, 54, 55, 122, 186
  VIII-3, 4, 9, 14
  B-1, 2, 4
  D-2
  E-11, 13, 14, 18

rafting and kayaking
  I-15
  IV-81, 87
  V-93, 132, 231, 325, 415

Rare, Threatened and Endangered Species
  IV-2, 25, 42, 47, 48, 51, 52
  V-3, 8, 53, 157, 256, 349
  D-1

Recreation
  ES-6, 13, 17, 19
  I-7, 14, 15, 16
  II-2, 4, 40, 41, 42, 43, 44, 45, 46, 47
  III-9, 17, 30, 42, 44, 55, 76
  IV-2, 81, 133
  V-3, 15, 91, 130, 131, 132, 133, 134, 135, 194, 229, 230, 231, 232, 233, 234, 292, 323, 324, 325, 326, 327, 328, 383, 413, 414, 415, 416, 417, 418
  VI-6
  VIII-7, 9, 12, 18
  A-2

Regional Setting
  IV-4

research library
  IV-92

Restricted Access Policy
  V-46, 56, 118, 126

riparian communities
  IV-32, 36, 37, 38, 39
  V-33

River Protection Overlay
  I-17
  VIII-12,

roads
  ES-6, 13, 17, 19
  I-10
  I-14
  II-7, 13, 15, 26, 27, 29, 39, 49, 50
  III-5, 9, 17, 30, 42, 58, 65
  IV-10, 11, 18, 19, 20, 23, 50, 60, 61, 62, 68, 71, 75, 77, 82, 84, 85, 86, 88, 89, 90, 97, 102, 103, 106, 108, 112, 113, 114, 115, 116, 122, 123, 125, 126, 129, 147, 149
  V-5, 8, 29, 33, 34, 35, 36, 40, 42, 47, 48, 50, 51, 56, 57, 58, 60, 69, 71, 73, 76, 77, 78, 79, 82, 86, 103, 104, 105, 110, 111, 112, 117, 119, 120, 122, 126, 131, 163, 165, 166, 167, 171, 173, 175, 178, 179, 180, 181, 185, 189, 190, 212, 230, 245, 250, 263, 264, 265, 269, 271, 272, 273, 276, 277, 279, 287, 302, 324, 361, 362, 364, 365, 368, 369, 371, 378, 414
  VIII-5
  VIII-13
  A-2
  E-2, 6, 8

rock climbing
  IV-77
  IV-85, 103
  V-15, 54
  A-4,

rockfall
  III-61
  IV-9, 10, 11
  V-5, 6, 23, 25, 26, 136, 138, 235, 237, 329, 331
  VIII-14,

Scenic Resources
  III-69
  IV-2, 124, 125, 126
  V-3, 19, 106, 107, 108, 109, 110, 209, 210, 211, 212, 213, 214, 304, 305, 306, 307, 308, 394, 395, 396, 397, 398
  B-2

Section 7 Determination Process
  I-19

Sentinel Creek
  IV-5, 36

Social Resources
  IV-2
  IV-98
  V-3, 16, 101, 204, 300, 390

Socioeconomics
  ES-3
  IV-3, 120, 128
  V-3, 20, 110, 214, 308, 398

Soils
  IV-5, 9, 10, 11, 12, 13, 14, 17, 25, 27, 28, 29, 30, 31, 32, 34, 35, 37, 39, 40, 47, 52, 71, 123
  V-24, 25, 26, 27, 28, 35, 136, 137, 138, 139, 141, 235, 236, 237, 239, 329, 330, 331, 333
  VIII-5
  B-1, 2, 3
  D-2, 6, 7, 9, 11, 14, 15, 16
  E-7, 8, 18, 20

South Entrance
  IV-4, 17, 111, 112, 115
  V-119, 279, 290, 307
  E-5

South Fork
  ES-1
  I-1, 10, 14, 15, 17
  II-12, 14
  III-34
  IV-4, 5, 8, 13, 16, 17, 18, 20, 21, 22, 23, 24, 28, 29, 33, 40, 41, 42, 45, 51, 54, 55, 64, 66, 69, 70, 76, 80, 81, 82, 83, 84, 85, 86, 87, 92, 93, 97, 99, 103, 107, 109, 111, 112, 115, 116, 122, 123, 124, 125, 127, 128, 129, 135, 147, 149, 150, 151
  V-23, 24, 30, 31, 32, 35, 36, 37, 39, 41, 42, 43, 44, 45, 48, 50, 51, 53, 54, 58, 60, 61, 68, 70, 71, 75, 80, 84, 102, 106, 114, 123, 126, 133, 134, 136, 144, 169, 232, 233, 238, 326, 327, 332, 416, 417
  VIII-13
  D-2, 6, 17
  E-14, 15, 20

special-status species
  I-14
  I-15
  I-16
  II-31, 49
  IV-48
  V-53, 54, 55, 56, 57, 58, 59, 61, 62, 130, 131, 132, 133, 134, 135, 157, 159, 161, 229, 230, 231, 232, 233, 234, 257, 258, 323, 324, 325, 326, 327, 328, 349, 413, 414, 415, 416, 417, 418
  VI-4
  B-1, 2

Stable
  IV-23, 33, 36, 42, 58, 88, 89, 133, 134, 136, 138
  V-24, 55
  VIII-2
  E-7

stock use
  ES-8
  I-15
  II-15, 35, 38, 41, 45
  III-45
  IV-81, 85, 88, 97, 148
  V-15, 32, 37, 39, 52, 54, 61, 134, 140, 145, 148, 153, 158, 162, 163, 170, 178, 183, 195, 232, 238, 268, 281, 286, 326, 332, 360, 378, 416
  C-8

Swimming
  ES-6, 13, 17, 19
  II-15, 42, 45, 49
  III-9, 17, 30, 42
  IV-23, 81, 83, 84, 94, 101, 103, 104, 121, 138
  V-15, 55, 119, 126, 141, 178, 184, 196, 215, 347, 352
  A-4

Tioga
  pass
  II-12
  IV-4, 9, 89, 112, 114
  road
  II-12
  IV-4, 62, 96, 112, 149
  D-6
  E-3

Traditional Cultural Resources
  IV-2, 73
  V-3, 81, 183, 280, 372

trails
  ES-5, 15
  I-14
  II-25, 32, 35, 38
  III-21, 29, 31, 45
  IV-62, 64, 68, 70, 71, 77, 79, 89, 91, 96, 99, 147, 149
  V-27, 43, 52, 61, 68, 69, 74, 86, 95, 117, 125, 130, 229, 276, 292, 311, 319, 323, 368, 413
  VI-8
  C-8
  E-6
  John Muir
    IV-76, 86, 92, 97
    V-188, 286, 377
  Lower Yosemite Fall
    IV-65
  Mist
    IV-14, 88
    E-12
  multi-use paved
    II-7
    IV-85
    E-4

- social
  - II-31, 37, 40, 42, 43, 44, 49
  - V-58, 146, 178, 192, 239, 252, 287, 290, 333, 344
  - VIII-13
- Valley Loop
  - IV-85
  - E-10
- Yosemite Falls
  - IV-97

transit
- II-29, 41, 43, 44, 45, 46, 47
- III-33, 35
- IV-106, 122, 138
- V-17, 67, 74, 76, 177, 196, 210, 215, 216, 274, 276, 281, 287, 304, 366
- C-2, 4, 6
- E-12

Transportation
- ES-3
- II-29
- III-5
- IV-2, 3, 80, 112, 131, 132, 144, 149
- V-3, 17, 103, 105, 206, 207, 301, 391
- VI-4, 6
- VIII-18
- B-2, 4
- E-3, 20

Tuolumne County
- IV-56, 129, 135
- VI-7

U.S. Fish and Wildlife Service
- I-13
- II-3
- IV-25, 28, 29, 30, 31, 32, 50, 51, 52, 53, 107
- V-157
- VI-4, 6
- VIII-18
- D-1, 17

Unavoidable Adverse Impacts
- V-124, 223, 317, 407

United States Forest Service
- II-12
- III-55
- IV-16, 31, 42, 109
- VIII-18
- D-4

User Capacity
- ES-2, 5, 11, 15, 17
- I-3
- I-6
- I-20
- I-25
- II-2, 8, 30
- III-2, 4, 7, 9, 15, 17, 30, 31, 42, 43, 53
- IV-2
- VI-2
- VIII-14
- A-1
- C-1
- Environmental Consequences
  - V-1, 4, 14, 23, 24, 25, 27, 31, 32, 39, 45, 46, 48, 49, 53, 54, 56, 58, 59, 70, 77, 78, 79, 80, 81, 82, 83, 86, 87, 88, 91, 92, 93, 94, 96, 98, 101, 102, 104, 105, 106, 107, 108, 110, 111, 115, 125, 126, 128, 129, 130, 131, 132, 133, 134, 135, 136, 144, 145, 146, 147, 148, 149, 150, 152, 154, 156, 157, 159, 161, 182, 183, 188, 193, 194, 195, 202, 203, 204, 205, 214, 216, 219, 222, 223, 224, 225, 228, 229, 230, 231, 232, 233, 234, 235, 243, 244, 245, 246, 247, 248, 249, 250, 252, 253, 255, 256, 257, 258, 260, 275, 276, 280, 282, 283, 285, 291, 292, 293, 295, 296, 298, 301, 305, 308, 313, 318, 319, 322, 323, 324, 325, 326, 327, 328, 329, 336, 337, 338, 339, 341, 342, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 372, 373, 377, 382, 384, 385, 386, 395, 398, 401, 403, 404, 405, 406, 407, 408, 409, 412, 413, 414, 415, 416, 417, 418

Vegetation
- II-42
- III-62
- affected environment
  - IV-34, 45, 48, 50, 57, 67, 70, 75, 79, 97, 102, 107, 123, 147
- environmental consequences
  - V-8, 38, 148, 247, 341
- non-native species
  - IV-36, 38, 45, 52, 105
  - V-33, 38, 42, 44, 49, 50, 52, 59, 60, 62
  - B-2
  - D-8
- oak
  - IV-32, 34, 46, 49, 74, 127
  - V-55
  - D-3, 8, 13, 16
- orchards
  - IV-67
  - V-86, 89, 189, 287, 378

Visitation
- ES-14
- I-20
- II-6, 14, 26, 41
- III-10, 32, 35, 48, 49, 59
- IV-102, 113, 119, 120, 140, 142
- V-110, 217, 311, 392
- VIII-2, 15
- C-2, 6, 8

Visitor Experience
- ES-1, 2, 6, 13, 17, 19
- I-3, 19
- II-1, 2, 4, 8, 16, 30
- III-2, 9, 17, 30, 42, 46, 47, 58
- IV-2, 81, 98, 101, 102, 149
- V-3, 14, 91, 194, 292, 382
- VI-2
- VIII-4, 7, 8, 14, 18
- A-4

Visitor Services
- I-20
- III-20, 68, 72
- IV-2, 90, 92, 95, 111, 136, 149
- V-3, 14, 15, 16, 91, 98, 99, 100, 124, 154, 155, 156, 159, 161, 180, 185, 190, 194, 202, 203, 219, 292, 297, 298, 299, 313, 382, 387, 388, 389, 403
- A-5
- restaurants
  - IV-94, 111, 136, 137
  - V-98, 388

water resources
- I-19
- III-7
- IV-23, 108
- V-140, 141, 238, 332, 333
- VIII-13
- B-1

Waterfalls
- I-14
- II-49
- IV-21, 44, 51, 62, 65, 83, 101, 104, 124
- V-28, 107, 131, 132, 140, 210, 230, 239, 304, 324, 333, 395, 414

Wawona
- ES-17
- I-16
- III-5, 9, 10, 17, 20, 30, 32, 34, 42, 44, 47, 58, 61, 68, 70
- IV-8, 13, 16, 17, 20, 22, 33, 41, 51, 72, 75, 79, 81, 93, 95, 111, 115, 116, 123, 127, 138
- C-2, 4, 5, 6, 7, 8
- environmental consequences
  - V-30, 34, 41, 48, 58, 65, 72, 79, 83, 88, 93, 96, 98, 105, 108, 111, 118, 120, 121, 143, 147, 151, 156, 161, 167, 175, 181, 186, 192, 199, 201, 203, 208, 213, 215, 221, 242, 246, 250, 255, 260, 266, 273, 279, 284, 290, 295, 297, 298, 303, 307, 315, 335, 339, 344, 348, 353, 358, 365, 371, 376, 381, 385, 387, 393, 397, 400, 406

Wawona Hotel
- IV-24, 79, 89, 93, 94, 95, 106, 111, 123, 124, 138, 139, 150
- V-15, 35, 41, 48, 58, 88, 120, 192, 290, 381
- C-3, 4, 7

Wetlands
- ES-3, 11
- I-3, 14, 16
- II-6, 50, 51
- III-10, 12, 62
- IV-1, 20, 24, 25, 26, 27, 28, 29, 31, 32, 34, 43, 47, 102, 103
- V-3, 8, 28, 31, 32, 33, 34, 35, 36, 37, 38, 40, 50, 60, 131, 134, 140, 144, 145, 146, 147, 148, 230, 233, 239, 243, 244, 245, 246, 247, 324, 327, 333, 336, 337, 338, 339, 340, 414, 417
- VIII-1, 4, 10, 12, 15
- B-1, 2, 3
- D-4, 13, 14, 15, 16, 17

Wilderness
- ES-1, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19
- I-10, 14, 15, 16, 22
- II-8, 11, 12, 13, 14, 16, 25, 26, 39, 40
- III-2, 4, 7, 8, 9, 10, 11, 15, 17, 20, 21, 22, 23, 24, 30, 32, 33, 34, 36, 42, 43, 46, 49, 58
- IV-2, 19, 23, 30, 31, 33, 34, 35, 40, 41, 49, 70, 74, 75, 76, 81, 82, 83, 88, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 103, 109, 110, 111, 125, 136, 149
- V-3, 14, 16, 27, 28, 32, 35, 37, 39, 41, 42, 43, 45, 46, 49, 52, 53, 54, 55, 61, 63, 68, 70, 71, 73, 75, 77, 80, 81, 86, 91, 95, 96, 97, 98, 99, 100, 101, 103, 107, 108, 109, 110, 116, 117, 119, 120, 121, 123, 125, 130, 131, 133, 134, 139, 140, 141, 145, 146, 149, 152, 153, 156, 158, 161, 162, 163, 169, 170, 177, 183, 188, 189, 194, 195, 200, 202, 204, 205, 206, 209, 210, 213, 214, 220, 221, 222, 224, 229, 232, 233, 238, 239, 243, 244, 248, 252, 257, 262, 268, 269, 275, 280, 286, 292, 296, 297, 299, 300, 301, 304, 308, 314, 316, 317, 319, 323, 326, 327, 332, 333, 337, 341, 342, 345, 349, 350, 354, 360, 361, 367, 372, 373, 377, 378, 383, 386, 387, 389, 390, 391, 394, 395, 398, 404, 406, 407, 409, 413, 416, 417
- VI-7
- VI-8
- VIII-9
- VIII-11
- VIII-15
- VIII-16
- VIII-18
- A-1, 2, 5
- C-2, 4, 5, 6
- E-7, 20
- wilderness experience
  - IV-2, 95
  - V-3, 16, 100, 204, 299, 389
- Wilderness Management
  - ES-7, 14
  - I-22
  - II-11, 12, 25
  - III-4, 15, 34
  - IV-88
  - V-37, 43, 52, 61, 68, 70, 71, 73, 75, 95, 97, 99, 101, 109, 116, 123
  - A-2, 5
  - C-6

E-7, 20

Wilderness Trailhead Quota System
ES-6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19
II-8, 11, 12, 13, 14
III-2, 4, 7, 8, 9, 11, 15, 17, 20, 22, 30, 34, 36, 42, 43, 46, 49, 58
V-45, 91, 96, 100, 194, 225
VIII-16
C-2, 5, 6

Wildlife
II-40, 41, 44, 45, 46, 47
IV-2, 25, 41, 42, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53
V-3, 8, 44, 45, 50, 152, 153, 157, 158, 251, 253, 345, 394
VI-4
VIII-18
  amphibians
  IV-5, 30, 52
  V-9, 55
  bears
  II-37
  IV-42, 43, 49
  V-50
  birds
  IV-5, 45, 48
  V-53
  D-7
  invertebrates
  IV-29
  mammals
  IV-5, 48, 52
  V-50
  D-1, 7
  reptiles
  IV-5, 30, 52

Yellow Pine
IV-38, 93, 136, 150
C-2, 6

Yosemite Area Regional Transportation System (YARTS)
ES-3
II-35, 38
IV-116, 117, 118, 119, 122, 138, 139, 140, 143, 144
V-164, 171, 253, 258
VIII-18
E-20, 21

Yosemite Association
II-37
IV-79, 90, 91, 92, 110, 137, 138
VI-2, 9

Yosemite Falls
II-12
IV-82
IV-97
IV-115
IV-125
V-26, 43, 51, 61, 68, 80, 84, 89, 95, 97, 99, 123, 144, 146, 150, 153
VIII-5
D-9
E-12

Yosemite Institute
II-37
IV-79, 91, 110, 137, 138
V-87, 88, 190, 289, 380
VI-2, 9
E-3

Yosemite Lodge
ES-1
III-47
IV-19, 31, 38, 84, 85, 91, 93, 94, 95, 109, 114, 115, 116, 121, 123, 127, 136, 137, 150
V-15, 31, 37, 43, 46, 52, 62, 68, 75, 81, 85, 95, 99, 104, 106, 109, 114, 115, 116, 123, 144, 146, 150, 153, 219, 313, 403
C-2, 6
E-9, 10, 19

Yosemite Museum
IV-2, 4, 91, 92, 95, 148
V-14, 117
VI-7, 8

Yosemite Village
IV-58, 59, 60, 76, 77, 84, 85, 90, 95, 109, 114, 115, 116, 122, 123, 127, 136, 137, 151
V-31, 37, 38, 44, 52, 62, 69, 76, 81, 86, 90, 95, 97, 99, 104, 106, 110, 115, 123, 287, 378
E-9, 10, 12

Yosemite Village Historic District
IV-77
V-86, 287, 378

Yosemite West
VI-9

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